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AMERICAN

AUGUST 1985 VOL. 7 NO. 8

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GUIDE

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AMERICAN SURVIVAL

VOLUME 7, NUMBER 8 AUGUST, 1985

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COVER:

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Here It Is:

SURVIVALIST DIRECTORY

*A confidential, free
information exchange...*

THIS IS A CONFIDENTIAL listing of survivalists who wish to become known to others of like mind. *American Survival Guide* will accept properly coded mail, and forward it to the coded addressee, without charge. *American Survival Guide* accepts no responsibility for the contents of these confidential survivalist communications:

ASG 1001

Miranda, California, a dedicated survivalist, and outdoorsman, seeks contact with other self-reliant people.

ASG 1002

Austin, Houston, San Antonio, Texas, seeks other families and candidates from these areas to form a survival group; has retreat.

ASG 1003

Easley, South Carolina, would like to communicate with survivalists in the Eastern United States, especially Greensboro, North Carolina.

ASG 1004

Palestine, Texas, is looking for a group in this state and seeks contact with individual survivalists.

ASG 1005

Indianapolis, Indiana, this individual and his wife wish to communicate with survivalists to exchange information.

ASG 1006

Laurelville, Ohio, wishes to join a "survivalist network," and thinks teamwork is the proper way.

ASG 1007

Minneapolis, Minnesota, would like to get in touch with people who share interest in survivalism.

ASG 1008

St. Petersburg, Florida, wishes to make contact with survivalists in Florida—patriots, no liberals, junkies or Big Brother employees.

ASG 1009

Fargo, North Dakota, seeks a survival group in which to become a member.

ASG 1010

Wixom, Michigan, seeks information on survival groups in the Detroit, Michigan, metropolitan area.

ASG 1011

Huntington Beach, California, long-time survivalist wishes to correspond with like-minded individuals in Central and Northern California.

ASG 1012

River Falls, Wisconsin, member of national survivalist organization desires communication with other survivalists in Minnesota/Wisconsin area.

Address response letters as follows:

American Survival Guide

ASG 0000 (Code Number, As Above)
2145 West La Palma Avenue
Anaheim, CA 92801

Your letters will be forwarded to persons listed within two days of receipt. *American Survival Guide* accepts no responsibility for loss or delay of inquiry letters. Contact letters that do not carry the appropriate code number will be discarded.

Those who wish to be added to the directory listing, please send names and addresses to *American Survival Guide*, 2145 West La Palma Avenue, Anaheim, CA 92801. The listing is free. ●

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TO THE POINT

Handgun Illustrated joins American Survival Guide in self-defense and freedom...

WE'RE PRODUCING another magazine: *Handgun Illustrated*. It aims to fill the gap between sports firearms magazines, and the comic-book style of fearsome-firepower magazines that bear no relationship to the real world.

This magazine will emphasize self-defense and self-protection in this increasingly violent, crime-ridden world.

We invite our *American Survival Guide* readers to examine carefully *Handgun Illustrated*, the Fall, 1985, issue of which will be on sale at newsstands nationwide soon.

This magazine will portray competitive combat shooting, practical pistol shooting, and the techniques of self-defense and general interest handgun articles.

Some of this magazine's space will be devoted to ammunition and to reloading for specific applications.

Our writers and editors will review and discuss *handguns* in the dual contexts of past and current technology, and of firearms history. Our editorial writers will speculate on the future of handgun and ammunition technology.

Our handgun tests, conducted in the field and at the range, are and will be as accurate as we can make them, both from a technological standpoint, and from staff subjective opinion. Each handgun test will include a data panel, as do the firearms test reports in *American Survival Guide*. These data panels will comprise salient features of each handgun and its mechanisms, along with prices for specific handguns, various models and accessories.

The cover of *Handgun Illustrated* carries the words: Sport • Defense • Recreation. We mean that. We will stress the protection of life, home, family and property. We will abide by federal, state, and local law in advising techniques for defense with hand weapons. We will now state and continue to reiterate that taking a human life with a handgun presents severe consequences. We will stress citizen responsibility in the use of handguns. And we will advise never to fire unless there exists a grave threat to your life, or to the lives of your loved ones.

We will support the Second Amendment to the Constitution of the United States, and the right of Americans to "... keep and bear arms..." Our approach to fighting the rising anti-handgun

tide in the U.S. will be neither radical nor loud. Our intent is to school our readers in how to become politically effective through national, state and regional organizations, lobbying, warchests, candidacy for office, and communication with one's elected officials — from town council to President of the United States. You have a voice. We will instruct *Handgun Illustrated* readers on how to let that voice be heard.

Over our next issues, we will present interviews with anti-handgun advocates, along with rebuttals from the pro-handgun side.

Handgun Illustrated, for people who wish to guard themselves with increased effectiveness, results from market research conducted by the staff of *American Survival Guide*. These studies show that there exists a great number of Americans who own, or wish to purchase, pistols and/or revolvers for self protection, but who do not wish to read about Olympic-style bullseye matches, or NRA target shoots. This is why *Handgun Illustrated* exists today.

The only way for us to know whether this magazine satisfies the needs of our readers — you — is feedback to let our editors know what you think, and what, specifically, you would wish to read about in future issues. We promise to be responsive always to readers' interests and desires.

Our hope is to keep this publication on course in its dedication to freedom and self-defense.

We hope you will look for, ask for and purchase *Handgun Illustrated* off your favorite newsstand. Should you buy this new magazine, we sincerely hope the articles contained within will prove of value to you — worth the cover price.

Whether you buy this magazine again, or enter a subscription, however, is entirely up to us.

If we can provide the information you require to improve your personal security skills, we'll have done our jobs well. We intend that *Handgun Illustrated* will provide information that is of instructional worth, much in the tradition of *American Survival Guide*.

If *American Survival Guide* has proven of value to you, so will our new magazine, *Handgun Illustrated*. Please take a look.

— Dave Epperson.

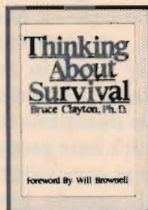
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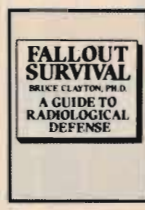
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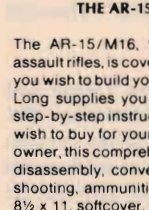
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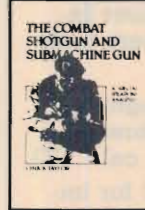
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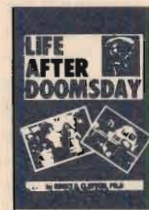
by Duncan Long
The AR-15/M16, the inspiration for so many modern assault rifles, is covered here in this definitive book. Should you wish to build your own or convert it to auto fire, Duncan Long supplies you with parts and tool lists and detailed step-by-step instructions. Virtually any accessory you may wish to buy for your AR-15 is listed. Invaluable to the M16 owner, this comprehensive book also covers assembly and disassembly, conversion kits and modifications, troubleshooting, ammunition, combat use, lubrication and more. 8 1/2 x 11, softcover, photos, 168 pp. **\$14.95**



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SURVIVAL LINE

Assault weapons, words, friends, computers, preparedness and EMP...

CALIFORNIA NRA members recently travelled to Sacramento to oppose an attempt by anti-gun legislators to ban "assault weapons." Spokesmen for the NRA said that attempting to define an "assault weapon" is impossible. The proposed ban, says the NRA, is just a first step toward outlawing all private ownership of firearms—rifles as well as handguns.

While the NRA will probably win in California the anti-gunners say there are already plans to try to outlaw possession or sale of "assault weapons" through federal legislation.

In a Word?—The Soviet Union has taken a page from George Orwell's 1984 in its publication of a new Soviet version of the *Oxford Dictionary*. Ideas and words have been redefined to agree with Soviet ideology. For example, the *Oxford Dictionary* defines "capitalism" as "the condition of possessing capital or using it for production." The Soviet *Oxford Dictionary* defines "capitalism" as "an economic and social system based on private ownership of the means of production...and on the exploitation of man by man." The Soviet version goes on to define "communism" as "the theory revealing the historical necessity for the revolutionary replacement of capitalism by communism."

At the same time that the Soviets were redefining the dictionary, they were also using to the full the freedom of the press in the United States. Recently, a half page, \$13,000 advertisement was placed in the *Washington Post* by the Soviet embassy in Washington, D.C. The advertisement was an editorial from *Pravda* which criticized the United States stance on arms control negotiations and nuclear missile deployment in Europe.

Friends—A Dutch farmer has offered the Soviet Union his 109-acre farm so that they may place SS-20 missiles there. The offer was made as a protest to the proposed stationing of U.S. cruise missiles in the Netherlands.

If the Soviets have their way, the peace-loving farmer may very well get to see at least one SS-20, as there are currently over 1,000 SS-20 warheads aimed at Western Europe, including the Netherlands.

Computers—As computer bulletin board use increases around the country,

so too does the opportunity for survivalists to "get together" and share knowledge. There is, however, a darker side to some BBSs. The "Liberty Net" system is operated by the Aryan Nations—a neo-Nazi, white-supremacist, paramilitary group, which has recently been in the headlines because of illegal activities. The mass media frequently describes the Aryan Nations and other such hate groups as "survivalist" groups. True survivalists, however, know that such groups have little in common with the spirit and tenets of the survivalist movement.

Preparedness—California seems to be getting serious about preparing for an earthquake. "Duck and cover" drills are conducted four times yearly in California schools, 6 million "earthquake booklets," outlining what to do in the event of a quake, are being distributed, and hospitals, fire departments, and Red Cross chapters are holding earthquake drills.

All of this activity came about as part of the first annual "earthquake preparedness week" held recently throughout 20 counties and 200 cities across California. The motivation for all this activity was a recent scientific study which showed a major quake occurring in California every 160 years plus or minus 30 years. The last major quake along the southern portion of the San Andreas fault occurred in 1857.

Behind the Mask—The South Korean government has announced plans to provide every member of its population, more than 40 million people, with a gas mask. The fear is of a chemical attack by the North Koreans whose stocks of chemical weapons keep growing. Communist countries such as North Vietnam and the Soviet Union have been accused of using chemical weapons against soldiers and civilians in Cambodia and Afghanistan.

This military threat, when added to the potential for industrial accidents such as the Bhopal, India, tragedy, might make those survivalists who have not included gas masks in their survival kits rethink their decisions.

Beating EMP—A new communications antenna has been developed by Rockwell International Corp. The antenna reportedly can withstand the electromagnetic pulse (EMP) generated by a nuclear explosion. The device will help protect vital U.S. communications links in the event of a nuclear attack. •

BATTLE DRESS UNIFORM (BDU)

GENUINE GI

Originally worn in the jungle of Vietnam, the general features of the **GI** combat battle fatigues are as follows:

Pants—cut full for complete freedom of movement these feature drawstring cuffs and adjustable pull tab waists. For maximum utility, they are constructed with 6 pockets, 2 of which are large bellowed cargo pockets, on the thigh.

Shirt/Jacket—also cut full, these rugged versatile fatigues feature 4 pockets (2 breast pockets and 2 huge bellowed hip).

Sizes—military waist sizes are XS, S, M, L, XL. Length sizes are regular and long. Not all length sizes are available in a particular style. For best fit, please tell us your waist, chest, inseam and height and we'll try to find the right size for you. Remember that jungle fatigues fit completely different than a pair of jeans.

Woodland Camouflage

Pattern BDU's—GENUINE GI

These 50% cotton, 50% nylon fatigues are the latest issue to all services. In these Woodland BDU's the military has combined complete utility and freedom of movement into garments made to last for years of hard wear.

The fabric combination of breathable, comfortable cotton combined with the nylon seems to make them indestructible. The seat and knees in the pants, and the elbows in the jackets have been reinforced. The bellows pockets are even roomier than the jungle fatigues that were the predecessor to the BDU.

These are a best bet for the hunter, sportsman or outdoorsman who wants clothing that he can depend on season after season. **Brand New.**

Specify: Jacket or Pants \$30.00/each; \$57.50/set

Desert Camo Pattern BDU's—GENUINE GI

These day desert pattern BDU's are the current issue to the US Rapid Deployment Force who have been trained for warfare in the Middle East. These are designed exactly like the Woodland Camouflage Pattern BDU's described above, complete with reinforced knees and seat. **Brand new. Specify: Jacket or Pants \$34.00/each; \$65.00/set.**

Olive Drab (OD) Green Jungle Fatigues—

These were one of the first jungle fatigues used in Vietnam. **GENUINE GI** They were phased out in the late 1960's and early 1970's. These 100% cotton ripstop fatigues are currently being manufactured under a government contract to the original military specs. **Brand new. Specify: Jacket or Pants \$30.00/each; \$57.50/set.**

Tiger Stripe Camouflage Pattern BDU's

These are made by a US Government contractor to military specs. The tiger stripe pattern is true. They are reinforced as the Woodland Pattern BDU's above. Regular lengths only (no longs). 50% cotton 50% nylon.

Brand new. Specify: Jacket or Pants \$34.00/each; \$65.00/set.

Solid Black BDU's

A favorite of SWAT teams, these fatigues were manufactured in the US by a government contractor to military specs. 50% cotton/50% nylon, these are reinforced as the GI Woodland Pattern above. Regular lengths only (no longs). **Brand new.**

Specify Jacket or Pants \$34.00/each; \$65.00/set.

Urban Camouflage Pattern BDU's -

A strikingly different camouflage, our urban camo may be the SWAT alternative to the solid black or woodland camo. The Urban pattern? Well, visualize a leaf or woodland design with the colors being various shades of grey and solid black. Now you can understand why we say it's a striking alternative to the uniforms you've seen.

Our Urban Camo BDU's are durable, easy care 50% cotton/50% polyester fabric and are manufactured in the USA to military specifications. So, the pants have a reinforced seat and knees, the jacket has reinforced elbows. Also featured are: pull tab waist, drawstring cuffs, covered buttons and the attention to every small detail which you've come to expect. **Brand New. Sizes: XS, S, M, L, XL.**

Regular Lengths - Specify: Jacket or Pants \$34.00/each; \$65.00/set
Long Lengths available in Pants only S, M, L \$30.00/each; \$57.50/set

Woodland Camouflage Pattern BDU's -

Lightweight, Warm Zone Wear -

100% cotton, Ripstop

One of the loudest complaints voiced by our troops during and after the US incursion into Grenada was that the fatigues they were wearing were too heavy and warm. No wonder - the GI Woodland BDU's are half cotton/half nylon and constructed to be for general use year-round. So in a warm, humid climate they could seem almost oppressive especially to troops pursuing an activity as strenuous as fighting a war.

After Grenada the US military quickly designed lightweight BDU's for wear in Warm Climate Zones. Kaufman's has secured an over-run of fatigues under consideration for issuance to all troops. Our lightweight BDU's are made in the USA (of course) by a military contractor. They offer all the features of the Woodland BDU's, standard weight. That is, they are in the Woodland Camouflage Pattern and feature reinforced knees and seat, pull tab waist, drawstring cuffs, quality construction, covered buttons, etc. The lightweight fatigues however are 100% cotton, woven in a ripstop design. So they are lightweight, cool and comfortable, yet very durable.

Presently our Warm Zone Lightweight Woodland BDU's are available only in regular lengths (no longs). However, in time long lengths may become available, so feel free to call our Customer Service Department on our toll-free line to learn about our current inventory. **Brand New. Specify: Jacket or Pants \$30.00/each; \$57.50/set**

Used Camouflage Jungle Fatigue Jackets -

GENUINE GI

We have a limited supply of used, leaf pattern camouflage

fatigue jackets. These are the old style, used in Vietnam,

and so are in the 100% cotton ripstop fabric.

All of the jackets we have on hand are size small. These used Camo Jungle Jackets are Grade II's which means each jacket has been repaired and some of the repairs are very noticeable. However, each jacket is completely serviceable and we have cleaned them after the repairs were made. Kaufman's guarantees your satisfaction so you can buy with confidence. **Sizes: Small only. Length:**

Short \$9.75/each
Regular or Long \$12.75/each (Note - longs are very limited. Advise us when ordering if we may substitute a regular length if we are sold out on longs)

Used, OD Green Jungle Fatigues -

GENUINE GI

limited supply available - exactly as above, in excellent

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Regular or long length - small or medium waist (Note - long lengths are in

very short supply. Advise us if you can accept a regular length if we are sold out on

longs. Large and extra large waists are not available) \$22.75/each

Jackets - Only size extra small and small are available

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☐ **Desert camouflage; just issued to the U.S. Rapid Deployment Forces. 50% cotton/50% nylon; Genuine GI \$12.25/each.**
☐ **Olive Drab (OD) Green; 100% cotton GI ripstop as used in early Vietnam. Genuine GI \$14.00/each.**

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☐ **Woodland Camouflage Pattern**
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☐ **Desert Tan**
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SURVIVAL SELF-TEST

By Glenn A. Anderson

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Are you ready to unplug yourself from the remainder of an energy-dependent society, and to use the earth's natural resources to provide for your personal energy requirements? This month's Self-Test continues with Part II of a five-part mini-series developed from *Back to Basics*, published by the Reader's

Digest Association, Inc., Pleasantville, New York/Montreal. The Self-Test contains questions concerning survival-related information on obtaining energy from natural sources. Test yourself, then obtain a copy of *Back to Basics*, and study those areas where the Self-Test has revealed your weaknesses.

1. In order to heat an average 3-bedroom home with wood, you would require 6-7 cords per year. How many acres of woodland will you need to produce this amount of fuel each year for an indefinite period?
 - A. 10 acres.
 - B. 20 acres.
 - C. 50 acres.
 - D. 75 acres.
2. Which of the following represents the "best buy" in wood?
 - A. A one-half ton pickup truck of split hardwood.
 - B. One face cord of hardwood logs.
 - C. One cord of softwood logs.
 - D. One cord of split hardwood.
3. Properly equipped, you should be capable of harvesting how much firewood per day?
 - A. One-half cord.
 - B. One cord.
 - C. Two cords.
 - D. Two and one-half cords.
4. As a rule of thumb, how many trees, 12 to 14 inches in diameter, will it take to yield one cord of wood?
 - A. One.
 - B. Two.
 - C. Three.
 - D. Four.
5. The most efficient of the old-fashioned water wheels was the:
 - A. Undershot.
 - B. Breast.
 - C. Overshot.
 - D. Tub.
6. Of the following statements concerning a personal source of hydroelectric power, which is correct?
 - A. Even a small source can power a single-family home.
 - B. Small sources are extremely cheap to construct.
 - C. A source with less than 50 feet of head is inefficient.
 - D. The whole idea is an impractical pipe dream.
7. Which turbine is considered equal in performance to the rest, yet "low-tech" enough for home manufacture and maintenance?
 - A. Pelton.
 - B. Propeller.
 - C. Cross-flow.
 - D. Francis.
8. To determine how much potential electrical power a stream might deliver, you must measure its:
 - A. Head and velocity.
 - B. Head, velocity, and cross-sectional area.
 - C. Velocity only.
 - D. Cross-sectional area only.
9. The only attention that need be given to a traditional water pumping "windmill" is:
 - A. Annual replacement of gear case oil.
 - B. Semi-annual rotor alignment.
 - C. Tri-annual filter cleaning.
 - D. Periodic greasing of the shaft.
10. Which of the following statements concerning wind power plants is correct?
 - A. They are capable of unlimited kilowatt output.
 - B. They are best utilized as a back-up for other sources.
 - C. They are useful only for powering small appliances.
 - D. They are an unreliable source of emergency energy.
11. To be worth considering the installation of a wind power plant, the area should have an average annual wind speed of:
 - A. At least 6 MPH.
 - B. 12 MPH or greater.
 - C. A minimum of 15 MPH.
 - D. 25 MPH.
12. Storage batteries utilized with a wind power plant have a life expectancy of approximately:
 - A. 10 years.
 - B. 20 years.
 - C. 30 years.
 - D. 40 years.
13. Which of the following statements concerning solar water and space heaters is correct?
 - A. They are 100 percent efficient throughout the U.S.
 - B. They have a quick rate of payback in fuel costs savings.
 - C. They take over only a part of the heating load successfully.
 - D. They are mainly unsuccessful throughout the U.S.
14. In order to be considered practical, solar heat systems should amortize within what period after installation?
 - A. 1 year.
 - B. 3 years.
 - C. 7 years.
 - D. 10 years.
15. Which of the following is an example of a solar heating system of passive design?
 - A. Moveable parabolic reflector.
 - B. Flat plate collector.
 - C. Vacuum collector.
 - D. Greenhouse.
16. For maximum heat production, the total surface area of flat plate solar collectors should equal what portion of the floor area of the house they are used to heat?
 - A. 10 percent.
 - B. 25 percent.
 - C. 50 percent.
 - D. 65 percent.
17. Underground architecture ties in well with solar heating because such structures:
 - A. Require less energy to heat them.
 - B. Don't face any particular direction.
 - C. Have 100 percent southern exposures.
 - D. Utilize no active solar heating components.
18. One of the problems with methane digesters is that:
 - A. Methane can't be used in internal combustion engines.
 - B. Methane and oxygen can be an explosive hazard.
 - C. Methane residue is not biodegradable.
 - D. Methane digesters are useable only in warm climates.
19. Of the following wood burning stoves, which is the most efficient?
 - A. Shaker.
 - B. Box.
 - C. Airtight.
 - D. Franklin.
20. Which of the following would produce the greatest amount of ethyl alcohol (ethanol) per acre?
 - A. Wheat.
 - B. Corn.
 - C. Potatoes.
 - D. Sugar beets.

SCORING:

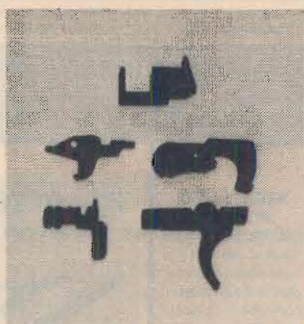
For each Survival Self-Test question answered correctly, score yourself 5 points. Then add them up. If your total is:

- | | |
|----------|--------------|
| Below 70 | Candlemaker. |
| 70-80 | Lamplighter. |
| 80-90 | Electrician. |
| 90-100 | Engineer. |

ANSWERS:

- | | | | | |
|------|------|------|-----|-----|
| 20-D | 16-C | 12-A | 8-B | 4-D |
| 19-C | 15-D | 11-B | 7-C | 3-B |
| 18-B | 14-D | 10-B | 6-A | 2-D |
| 17-A | 13-C | 9-A | 5-C | 1-A |

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Epperson On the Move

WITH THIS ISSUE of *American Survival Guide*, Dave Epperson will leave the magazine's staff. Epperson has been editorial director of ASG for the past 3½ years.

Epperson's move, he said, "is practicing what I've been preaching. My wife, Sally, and I are leaving the Ground Zero environment of the Los Angeles area, its (atmospheric and groundwater pollution) and we're putting a couple of mountain ranges between us and all of that."

Epperson will continue to contribute to *American Survival Guide*.

Bob Clark, formerly a field editor for ASG, and editorial director of three other McMullen publications, *Truckin'*, *VW Trends* and *Hot Bike*, will replace Epperson at the controls of *American Survival Guide*.

Jim Benson, who has been associate editor of ASG, will become managing editor of the publication, and will be in charge of the day-to-day operation of the magazine. Payton Miller, another ASG field editor, has been named executive editor of the magazine.

Epperson came to the previously titled *Survival Guide* on the first working day of 1982, and was the publication's chief editorial/opinion writer, firearms technical author, and contributor of numerous feature articles to the magazine.

Epperson is a graduate of the University of Oregon, and of Stanford University. He is an ex-Navy airman, and holds a commercial pilot certificate with instrument, multi-engine and glider ratings. He is a certified locksmith, and a certified firearms repairman. Epperson came to McMullen Publishing, Inc., from editorship of *The American Handgunner*, and earlier he had been editor of *Off-Road*, an Argus Publication, and managing editor of the CBS Publications *Pickup, Van & 4WD*.

"My new job won't include the creating of magazines," Epperson said, "something I've been doing for more than 20 years. However, the opportunity to relocate in a safer mountain area presented itself, and my wife and I grabbed it. We'll be out of doors, we'll have snow in winter, and we'll be breathing pure air and drinking mountain spring water. And we'll still be practicing survivalists."

Kenneth N. Yee, president of McMullen Publishing, said, "We will miss Dave and his magazine skills, but we wish him well in his new career. And readers will see his work in *American Survival Guide* from time to time." •

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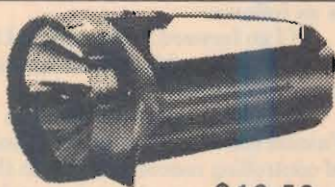
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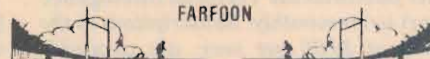
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PRISON GANGS

America's 'correctional' institutions spawn growing membership in these criminal, communist organizations...

By Ryan Quade Emerson

Ryan Quade Emerson is executive director of the International Research Center on Terrorism, a non-profit organization. The Center publishes the Terrorist Intelligence Report twice monthly. Subscriptions to the Report, at \$100 per year, are available through the International Research Center on Terrorism, 2520 Columbia Pike, Suite 207, Arlington, VA 22204.

WOULD YOU BELIEVE that your hard-earned tax dollars are paying to house, feed and train some of America's most dangerous terrorist and criminal organizations? Its true! Law enforcement agencies simply call them prison gangs, but there is a lot more to it, as a special investigation by *American Survival Guide* revealed.

California probably has the most serious problem with these blood-thirsty groups, and state police intelligence sources have estimated that hundreds of men have been murdered inside and outside of the state's prisons through the gangs' various activities. The willing participants in the killings include organizations with names such as the Aryan Brotherhood, the Black Guerilla Family, La Nuestra Familia, and the Mexican Mafia.

Law enforcement intelligence agents and prison officials have been able to track these groups and identify their operations through material confiscated during cell "shakedowns" (searches); items include contraband photographs. Some gang members have group tattoos, and others have admitted their affiliation to law enforcement officers or their families. A number of ex-gangsters have provided significant insights into the internal administration of the groups and their philosophies.

The Aryan Brotherhood is believed to have been formed in the late 1960s, inside San Quentin and Folsom prison walls. The gang seems to have its roots in an earlier group known as the "Bluebirds." Its function was to provide a measure of safety for white inmates against assaults and to promote white racism within the prisons. While some members come from the ranks of the outlaw motorcycle clubs, it would not be correct to identify all outlaw bikers as members of the Aryan Brotherhood. The goals of the Brotherhood are illegal narcotic distribution and

many other criminal endeavors. There is a strong anti-authority theme in this group's personality.

The Aryan Brotherhood has been loosely associated with the Mexican Mafia in a variety of illegal activities inside and outside of prison. Some of these combined operations include drug sales, bank robberies and contract murders. An early example of this sinister alliance was exposed by the California Senate Subcommittee on Civil Disorder some years ago. The committee produced evidence regarding a person named Castillo who was on the "hit list" of the Mexican Mafia. The contract was filled by two Aryan Brotherhood members approximately one hour after the victim was transferred to the California Institution for the men at Chino, California.

The structure of the Aryan Brotherhood does not follow paramilitary lines. Leadership is granted to persons with strength and criminal ability. Gang status is achieved by election of the membership. The Aryan Brotherhood seems most active in the penal institutions, rather than in the community, but, as will be shown, they do operate in the streets.

While no constitution has been attributed to the Aryan Brotherhood, its members do have a creed that they live by. In part, it says, "For an Aryan brother, death holds no fear. Vengeance will be his, through his brothers still here."

Black Guerrillas—Government sources have identified the Black Guerrilla Family as having been formed in the late 1960s and early 1970s. It is viewed as being the prison counterpart of the Black Liberation Army which has been responsible in the past few years for armored car robberies, police killings and bombings in behalf of pro-Soviet and Cuban causes. Investigators have described the original goals of the Family as including cultural unity, group protection, and promotion of armed revolution against the United States of America. In general, its members are black, but ex-gang members from other groups report some non-black membership and *American Survival Guide* has confirmed this. Prison activities have included drug trafficking among black inmates, revolutionary training, and attacks

on white prisoners and prison guards.

The Black Guerilla Family is loosely allied with the Nuestra Familia in its conflict with the Mexican Mafia and its ally, the Aryan Brotherhood.

The California Senate Subcommittee on Civil Disorder reported the existence of a paramilitary structure to guide the organization's activities. The following is from the Family's written material:

"Each prison has an organization which is directed through a central committee and five generals. Assignments are carried out by lieutenants and soldiers for their unit captain. In addition to the regular group discussions on Marxist political theory, recruitment programs include training in physical combat, and the ideological dogma which is intended to convince the new member to commit himself by a death oath to the Family."

The oath, in part, is as follows: "If ever I should break my stride, or falter at my comrades' side, this oath will kill me."

La Nuestra Familia originated in California prisons as a defensive reaction to activities of the Mexican Mafia. Some sources indicate it started in Soledad State Prison in 1967. Others say it began in San Quentin in 1968. There is essential agreement that it was formed to offer protection to Mexican-American inmates who were being pressured by the Mexican Mafia for such things as canteen items and homosexual acts. Its members have tended to come from rural areas and have often been referred to as the "farmers" by the Mexican Mafia. Its rural heritage is no longer completely true, as the organization now includes members from the metropolitan areas. This group is in a constant state of open conflict with the Mexican Mafia.

The La Nuestra Familia is cited as a "Blood-In-Blood-Out" group, and carries a lifetime obligation. Persons who fail to meet gang requirements may be marked for death. Intelligence sources state that at any one time there might be as many as several hundred names on the family's "hit list." An oath taken by new members is as follows:

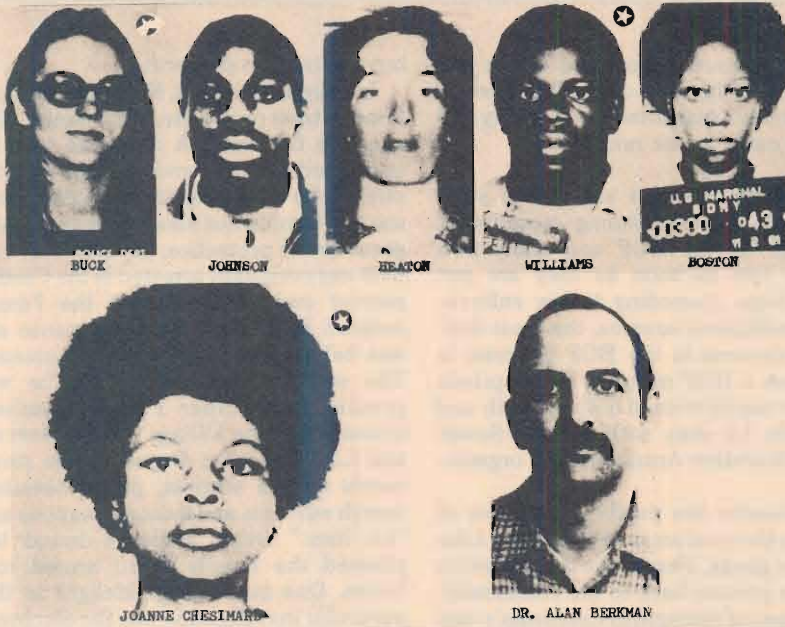
"If I go forward, follow me. If I hesitate, push me. If they kill me, avenge me. If I am a traitor, kill me."

With the passage of time, La Nuestra Familia came to recognize the profitability of controlling narcotics traffic in the prison system, and set about to establish the organization and power base to effect control. The family has allied itself with the Black Guerilla Family.

La Nuestra Familia is unique among the prison gangs in that it has committed itself to creating a corporate-style organization structure. The family has by-laws and a manual of operations, along with a training class that covers policies and regulations in detail, and even requires the recruits to pass a written examination.

The family's practice of putting every-

(NY85-March 26)—WANTED—The FBI said in New York Friday that these persons are being sought in connection with the robbery of a Brink's truck in Rockland County last October: From Left: Marilyn Jean Buck; William R. Johnson; Wendy Sue Heaton; Gerald Williams, also known as Mutulu Shakur, and Cynthia Boston. (AP Laserphoto)(jtm61515ho-fbi)82



INTERNATIONAL RESEARCH CENTER ON TERRORISM

FBI "wanted" flyer shows three associates of the Black Guerrilla Family and black liberation army. Indicated by dots are Joanne Chesimard, Marilyn Jean Buck and Jeral Wayne Williams, aka Mutulu Shakur.

thing on paper has given law enforcement the opportunity to do an analysis of the organization and its varied enterprises.

Paramilitary—The La Nuestra Familia is definitely paramilitary. The leader, or Nuestra General, commands some ten captains, each ranked within that command group and in charge of a regiment. The captains' power and authority vary, depending on whether the Family is at "war." The lieutenants are responsible for the acquisition of weapons, providing for indoctrination of new recruits, in-service training, and the maintenance of records, including the current "hit list." The soldiers occupy the bottom rung of the regimental hierarchy, and are organized into squads, depending on their reliability. There is provision for payment of squad members for such duties as narcotic distribution and the pimping of gang-controlled prostitutes.

Of all the groups that were researched, the Mexican Mafia, or EME as it is usually called, is the oldest. Available data indicates that it was formed in 1957 at the Deuel Vocational Institution, which is part of the California prison system. In its early years, the members were described by prison and police sources as "more or less hoodlum-type inmates who specialize in such pastimes as hijacking canteen (candy and cigarettes) from other inmates, collection of loans, dealing in drugs within the institutions, and supplying sex partners to those who were willing to pay for them." Additionally a measure of protection was afforded to the membership. A significant, but little recognized aspect

of the EME is that many of the members came to prison with a tradition of street gang membership. The barrios (neighborhoods of predominately Mexican-American residents) of East Los Angeles were a major contributor to the Mexican Mafia.

A report prepared by the office of the California Attorney General states:

"After its initial growth in the prison systems, the Mexican Mafia began to conduct organized criminal activities outside of the institutions. This situation has seriously escalated over the years."

It is estimated that there are probably several hundred hard-core members of the EME, and as many as 1,000 associates and sympathizers. The California Senate Subcommittee on disorders issued a report which states:

"The so called Mexican Mafia is interested in monetary gains derived from loan sharking and protection rackets. However, its primary interest is to secure complete control of the narcotics traffic within the prisons and on the streets of Southern California.

"The Mafia's outside operations are predominantly narcotics, robbery and murder. Barrio residents and illegal immigrants are usually the victims of the drug dealers, who are constantly at war with each other to take over territories. Part of the profits are believed to go into a central fund which is used to support international drug trafficking (heroin from Mexico), pay legal fees and buy weapons."

Outside Activities—The activities of prison gangs outside the penitentiaries

warrant close examination and prove that the term "prison gangs" in itself is a misnomer. Research of the origins of the Aryan Brotherhood has indicated that is racist in purpose. One important gang member discussed his perceptions of the group with *American Survival Guide*, and explained that racism is really only part of the picture. He stated that while there are "out-and-out racists" who are in the group, many persons, including himself, used this as a "front." The former gangster stated that his reasons for joining the group were for the profits of illegal endeavors and to make himself as comfortable as possible while serving his prison sentence. His belief is that other gangs operate using "fronts," and that they are power- and money-oriented.

Research by ASG did not demonstrate that crimes by the prison gangs are being committed for the sake of the organization, with a portion of the proceeds going back to a bank or other central funding source. Instead, there is an apparent close association and affiliation of persons who are members of the Aryan Brotherhood, Aryan Brotherhood sympathizers and white supremacists, and these individuals commit serious crimes on a major scale. Police sources in Southern California tell of how those members of the Aryan Brotherhood who are on the streets have been involved in the commission of bank robberies, residential robberies where the victims were assaulted, narcotics offenses, the possession of illegal weapons and explosives, and very possibly contract murder. The finding of weapons in quantity at the point of arrests involving the Aryan Brotherhood is a frequent occurrence. There is on record ample police intelligence that establishes beyond any doubt that there is a continuous association by Aryan Brotherhood members on the street. There is also information that the Brotherhood, in effect, "guarantees" the reliability of another member in the carrying out of a criminal enterprise in the community. Finally, it is the opinion of most law enforcement officials interviewed that there are "strong" men within the prison or community population who organize and execute crimes, but that there is no single cohesive command structure for the Aryan Brotherhood.

Criminal Misconduct—Of the four groups that ASG examined, the Black Guerilla Family showed the least amount of verifiable criminal misconduct in the community because their Black Liberation Army counterpart assumes that responsibility. Crimes, however, are occurring, but it is less clear whether this is a result of activities of the organization, rather than due to members who are using the group as a "front" while in prison, and who resume individually motivated criminal behavior upon release. This conclusion should be regarded as tentative because the operations of the BGF are very se-

cretive and informants who will talk about the group are very difficult to find. One prospective source who was to be interviewed declined at the last minute for fear of his safety, and said that to meet at all would confirm the existence of the group and jeopardize him.

There have been some cases recorded which give some insight into the group's street operations.

The University of California Police department discovered a body in a remote area of a campus which was identified as one Ira Cornelius. Cornelius had been stabbed, strangled and rolled down a hill. Investigators determined that while Cornelius was in prison he had been forced to smuggle in a large quantity of knives for the Black Guerilla Family, and had been caught. Cornelius confessed all to prison authorities and was, in time, released. Back on the streets Cornelius became connected with two BGF members who were selling heroin, and it was these drug dealers who eventually killed him on orders from inside the prison system. Court proceedings against Cornelius' murderers established that the "hit" was for the dead man's statements concerning the knives.

While narcotics were indirectly involved in the Cornelius case, they were the basis for a double homicide that occurred in the Los Angeles area. The incident involved a number of armed men who went into an apartment and took four persons hostage in what was characterized as "drug rip-off." After binding the victims, all were shot. Two persons died as a result of the shooting. Subsequently arrested were Michael (Pygmy) Cowans and James (Doc) Holliday.

James Doc Holliday, at the time, was believed to be the leader of the Black Guerilla Family. Holliday's status had been testified to by law enforcement officers in hearings before an investigating committee of the California State Legislature and United States House of Representatives Committee on Internal Security.

Charges against Holliday were subsequently dismissed, but Cowans was convicted on two counts of murder and robbery with the use of a weapon. The trial was lengthy, lasting an incredible one and one-half years. It is reported that a number of pretrial motions were entered on the issue of the circumstances in the case being related to the Black Guerilla Family but that the case was ultimately prosecuted without reference to gang affiliation, either as an issue or being demonstrated in court.

One interesting aspect of this case is that while in custody, Holliday, Cowans and an alleged member of the Aryan Brotherhood became involved in a fight

that left all parties wounded with a jail-made knife. The word on the "grapevine" was that the Aryan attacked Holliday and Cowans came to the rescue.

Recruitment—Jail authorities state that there is a continuing recruitment campaign by the BGF and many new inmates join as soon as they are put behind bars. According to law enforcement intelligence sources, the most dangerous element in the BGF program is that when a BGF member leaves prison he is thoroughly trained both mentally and physically for duty with the pro-Soviet Black Liberation Army terrorist organization.

La Nuestra has established bases of power in the rural areas of California. Like the other gangs, it has made the transition from the prisons back to the community. It has areas of strength in California's vast central valley, from Sacramento to Bakersfield, the coastal valleys from Hayward to Oxnard, and inland from Pomona and Chino, to Riverside and San Bernardino. Members can also be found in the urban areas such as Los Angeles, the stronghold of La Nuestra's arch enemies, the Mexican Mafia.

Normally, a captain will run a regiment, but this may be delegated to a lieutenant when there is no captain in residence. Ex-gang sources also described a dividing of the regiments into squads, using a classification system of members by a reliability measure. This method reportedly, was developed to limit the circulation of organization plans in the event a defector should talk to a police agency.

La Nuestra Familia's street operations include narcotics trafficking, extortion, robberies and homicide throughout California. While the Family has not reached the level of effectiveness associated with syndicated crime, such as the Sicilian Mafia, it is attempting to do so.

One interesting episode in the Family's history was an attempt to purge itself weak members and traitors. It created a new group titled the "New Family," and forced all those suspected of disloyalty to join it, thus building an additional layer of internal security.

The Family's activities in the Fresno, California, area at one time reached epidemic proportions. In one incident Luis Gonzalez and Tina Arevalo were found shot to death and dumped in rural Fresno. The case still remains unsolved, but police informants have stated that Tina Arevalo was being extorted at the rate of \$20 per day for weekdays and \$30 per day on weekends as protection from her earnings as a prostitute. It was reported that prior to her death she had complained to the police about Nuestra Familia pressure,

but declined to prosecute.

In a similar incident, Frances Castillo, a known street prostitute, was killed by five shots to the head. A detective who investigated the case, and had met with the victim two days prior to her death, said she had complained about Nuestra Familia pressure for protection payments. A suspect was eventually arrested in the Castillo murder and admitted that the Family ordered him to kill the girl because she was behind in her protection payments. The suspect also stated that he was present when other Family members talked about the killings of Tina Arevalo and Luis Gonzalez. Based on the statements of this suspect, police obtained search warrants and located weapons and "hit lists." Other evidence found implicated the Family in 10 armed robberies. One interesting sidelight to this particular investigation was the discovery that the Family used the names of women associates to mask the gang's operations. The houses searched were all in the names of women because most of the gang members were under parole supervision, and a condition of parole is that the parolee's residence may be searched at any time by his parole officer with police assistance.

It is part of the Family's MO (method of operation) to use force, intimidation and fear in its attempts to silence witnesses. A significant number of gang killings have occurred in the presence of witnesses. The gang hopes that the fear of its demonstrated violence will silence prospective testimony but there are those who have been brave enough to cooperate with the police, and, sadly, some have suffered for it. Eugenia Iniquez and her brother were attacked by six young men and sustained multiple stab wounds, but survived. Prior to the vicious assault, Ms. Iniquez had given testimony at a preliminary hearing of Frank Villagrana, a Nuestra Familia member who participated in the killing of Daniel Duran. As a result of her testimony, she was placed on the Family's infamous hit list. She later stated she was stabbed because of her testimony.

Slaying—In the Duran case, Villagrana and a 16-year-old were being prosecuted for the gunshot slaying of Daniel Duran. Both Villagrana and the juvenile pleaded guilty to negotiated charges and were sentenced to prison. Villagrana admitted to driving the getaway car after the juvenile killed Duran. It was noted at the time of the arrest of the men in the Duran killing that four handguns, drugs, and Nuestra Familia literature were discovered. Villagrana was no stranger to crime. At the time of sentencing he acknowledged probation violations involving escape and

grand theft, plus the charge of an ex-felon in possession of a firearm.

Another 18-year-old suspect admitted participation in the assault on Iniquez, as well as involvement in at least 10 different robberies in the area. He told police that he received Nuestra Familia assistance in carrying out his criminal enterprises.

The use of a 16-year-old in the killing and other juveniles on the the Iniquez assault confirms the use of juveniles to further the gang's interests. The NF believes that juveniles can be used profitably with less risk to themselves. Youngsters, anxious to be accepted as associates and eventually members, become willing tools. They are, in street jargon, "want-to-bes."

Fear of the gang's retaliation extends not only to prospective witnesses, but to jurors. In a prosecution of defendants Arthur Beltran and Phillip Lopez, a defense attorney moved successfully for a mistrial after a potential juror expressed fear for his safety because of the possible presence of gang members in the courtroom who would be able to identify jurors and potential jurors.

Active Center—Monterey County, California, has been an active center for NF activity. The District Attorney in that jurisdiction handles cases occurring both on the streets and in nearby Soledad prison. Some of the cases that are handled every year involve crimes committed by the prison gangs. Rafael Ernesto Gabriel was convicted of first-degree murder for the stabbing death of Alejandro Moreno. Art Beltran and Richard Din Castro were convicted of accessory after the fact to murder. Moreno was killed by Gabriel because he was a member of the Mexican Mafia. The evidence showed that the defendants belonged to the Nuestra Familia, which kept lists of all known Mexican Mafia members for the specific purpose of executing them on sight, no matter where or when they were seen.

In Stockton, California, NF gang members are subject to orders from the San Jose regiment. On one occasion, the Stockton group was having difficulty organizing itself because of heroin use within its own ranks. Use by NF members is a violation of the organization's constitution. (It is okay, however, to sell it). According to testimony given by defecting members, the NF captain from San Jose came to Stockton to discipline the local group for failing to commit crimes and forward a share to the central "bank." The captain selected one Stockton member to be killed as an example to the local soldiers. Jerry Miranda Blanco was murdered. At the trial of his killers there was testimony that the captain had ordered two soldiers from Gilroy, California, to drive to San Jose where they were given orders to kill Blanco in Stockton, which they did. The NF attempted to kill the mother of the

state's star witness in the Blanco case.

The records describing murders by the Nuestra Familia are endless, and they provide ample proof that someday this "prison gang" may be as big and powerful as the Sicilian Mafia which is the NF hero.

Developing usable data on the Mexican Mafia was a more difficult task than the research on the La Nuestra Familia. This ASG discovered was in part a result of the sophistication of the EME. The Mexican Mafia does not commit its intentions on paper, but in does seem to be involved in crime at a more professional level than the other three gangs. One report from police intelligence sources reveals that the EME was able to tap into a State of California computer terminal to gain access to residence and automobile registration information on persons in whom the gang had an interest.

Operational Ability—Generally, law enforcement is of the opinion that there is a difference in the scope and operational ability of the Mexican Mafia and the La Nuestra Familia. The overall interest in illegal activity and trafficking in narcotics remains comparable and like the NF, the Mexican Mafia is very active on the streets, as well as in the prison system.

East Los Angeles, California, is the apparent headquarters for the Mexican Mafia "international." The testimony a few years ago of one Eddie Gonzales gave police agencies the best insight to EME operations that they had ever had. Gonzales told how at the time there were 10 to 12 pounds of pure heroin arriving weekly in East Los Angeles to be cut and distributed around the state. Gonzales stated that the EME handled some \$10 million per year in drug business.

Bank robberies have occupied a position of importance in the EME street crime profile. In one confrontation with the police, EME members Marcello Baeza, Donald Galoz, Richard Hernandez and Charles Mendoza had just robbed the California First National Bank of Hawthorne, California. A gunfight ensued and Hernandez was killed. The most interesting aspect of this case is that when the bank heist took place, Galoz and Mendoza were under visual observation and surveillance by members of a Los Angeles Police Department special unit that is assigned to keep tabs on suspected prison gang members. When the officers realized what was going down, they called for assistance and the suspects were greeted when they exited the bank.

The bank robbery in Fresno was interesting because it involved both the Mexican Mafia and the Aryan Brotherhood. Martin Vargas and Daniel Cavanaugh, wearing business suits, entered Lloyds Bank and identified themselves as security officers. After gaining access to the vault area they grabbed \$111,500, and made good their escape. Both sus-

Continued on page 60

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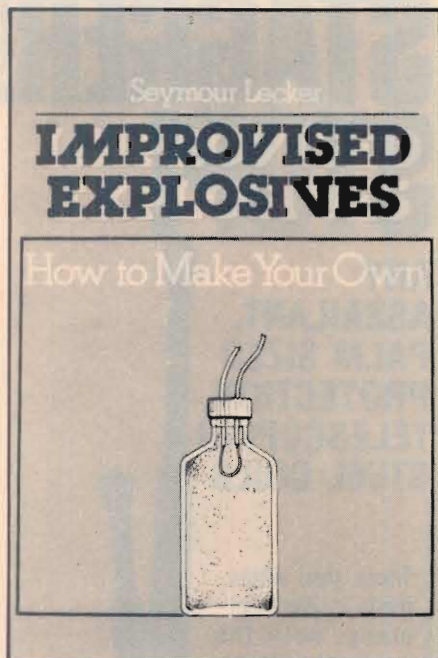


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BOOK REVIEWS



Improvised Explosives, How To Make Your Own, by Seymour Lecker; Paladin Press, P.O. Box 1307, Dept. ASG,

Boulder, CO 80302; 71 pages, paperback, \$8 plus \$3 postage and handling.

Neither the author, a former Israeli Army explosives expert, nor the publisher assume any responsibility for the use or misuse of information contained in this manual, which is intended for persons already knowledgeable in the field of explosives and incendiary devices. Should there come a time when a survivalist would deem it necessary to construct such devices, this book could be reference. It contains 10 "simple but powerful formulas for explosives and incendiaries" that provide "the basis to construct actual bombs, body traps, and mines." The book has chapters covering the materials, such as ammonium nitrate, nitric acid and sulphuric acid, needed to make these devices; fuses and detonators; timers; and types of bombs, incendiaries, booby traps and mines. It is amply illustrated with drawings. This book is offered "for information purposes only!" according to the publisher. The book ignores completely the possible peaceful post-disaster agricultural, mining or construction uses of improvised explosives.



The Crossbow as a Modern Weapon, by Galen L. Geer; Firepower Publications; available from Crossbow Book, P.O. Box 175, Dept. ASG, Florence, CO 81226; paperback, 74 pages; \$7.50.

"There is not a crossbow in the world, nor any type of bow made by any firm in the world that can seriously be considered as a primary survival weapon," writes the author in the chapter, "Survival Crossbows." "Any weapon that kills by bleeding

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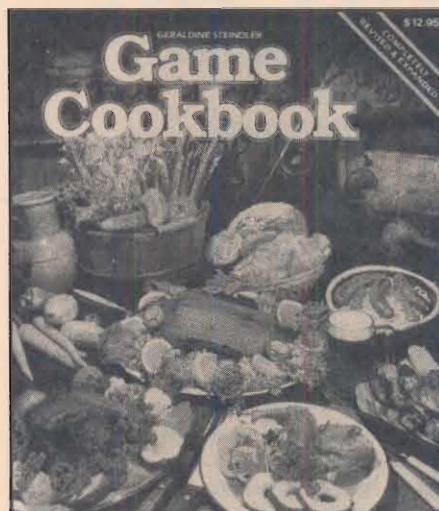
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and not by a combination of shock, bleeding and massive tissue damage should never be considered as a primary survival weapon. As a backup *tool* to be used in food gathering or as a hunting arm in any survival situation, the crossbow makes more sense than any other weapons system available short of trapping extensively." Although the crossbow was once a feared weapon of war, with the advent of gunpowder and firearms, the crossbow in warfare was relegated to the history books, says Geer. That fear of crossbows has carried over to today, however, primarily for a lack of information and understanding about the nature and functions of crossbows. They are simply not as powerful as "any kind of firearm," Geer says. But he emphasizes that the crossbow can be a very effective survival tool in food gathering. Clearly written and well illustrated, the book also covers types of crossbows, points and arrows, sights, scopes and extras, shooting the crossbow, maintenance, hunting and fishing with the crossbow. The book has plenty of valuable information for crossbow enthusiasts or anyone just curious about these fascinating weapons.



The Game Cookbook, by Geraldine Steindler; Stoeger Publishing Company, 55 Ruta Court, South Hackensack, NJ 07606; 288 pages, paperback; \$12.95 plus \$1.50 postage and handling.

Cooking game, especially larger animals, requires no magic incantations or involved recipes, according to the author who wrote the first edition of this book 20

years ago, and has continued to experiment, refine and adapt recipes ever since over 12 reprintings. "With the meat properly cared for from the time the game was shot, no unpleasant taste needs to be overcome by marinating in a witch's potion, nor does the flavor need to be masked by a great assortment of herbs and spices. The flavor of game is delicious as is—and the simpler the recipe, the better, in most cases." Indeed, that philosophy seems to serve her well as she covers the basics of preparing game from the time it is shot through her recipes for everything from beaver and muskrat to boar. There are chapters covering cooking of antlered game, bear, boar and other big game, upland birds, shore birds, ducks and geese, rabbit, squirrel, frogs, and fish, and even opossum and porcupine. Other chapters deal with quartering and butchering large animals, leftovers and luncheon ideas, game and non-game appetizers, vegetables and herbs, breads and desserts. This is truly a wide-ranging game cookbook with scores of simple yet tantalizing recipes drawn from the author's considerable experience in the field as well as in the kitchen. ●

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Build It Yourself:

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Bullet design, barrel twist, heavy barrels, stocks, bipods, grips, muzzle brakes and scopes all contribute to accuracy . . .

By Duncan Long

THE SNIPER RIFLE is a tool that survivalists must consider, if they expect to face armed combatants. Survivalists—unlike military fighters—cannot depend on supply lines, unlimited ammunition, or the like. To take up the slack, survivalists must plan carefully, use cunning, and employ guerrilla tactics. Traditionally, this is where snipers shine in armed confrontations. An effective sniper can overcome superior numbers, superior firepower, and make life impossible for would-be aggressors.

Until recently, a sniper rifle meant a bolt-action rifle chambered for .308 Winchester or some similar caliber. Many survivalists have found that the bolt-actions chambered for .308 "kick" too much for their tastes, and that the sniper rifles are too sensitive or too expensive to justify their purchase.

But, the U.S. military and NATO have solved the problems for the survivalist who wishes to take advantage of the huge expenditures of time and research involved in perfecting long-range rifles, using the lowly .223 Remington (5.56mm NATO).

A lot of readers believe that the .223 just doesn't hold a candle to the .308. But that's changing with the new .223 bullets. The usual assumption is that the .308 (7.62mm NATO) is better than the .223 for long range sniper work because the larger bullets are more wind resistant and

deliver more punch at longer ranges.

They were right. *Were!*

Coefficients—New bullet designs have boosted the ballistic coefficients of new .223 bullets to the point at which they are equally as effective as the .308 bullets.

A .223 sniper rifle—provided it has a fast twist and can chamber the new bullets—can now prove just a shade less lethal than its equivalent in .308! In fact, the .223 is more lethal, according to the recent NATO tests using some of the new .223 bullets.

For the rifle to work with these new .223 bullets, its twist must be fast and the chamber must be designed for the new, larger bullets. Those two requirements leave out the Mini-14, Galil, and most bolt-action sporters, as well as the current AR-15. However, fast-twist barrels are available on the commercial market for the AR-15. These barrels can be used to convert an existing AR-15—or even build a new rifle—which can handle the new bullets.

Just what can an AR-15 sniper rifle do?

Reality—First look at reality. Many survivalists talk about how they'll use a .308 sporting rifle for 1,000-yard sniper shots. That's highly unlikely. Whether a sniper rifle is a .308 or .223, there is a limit to the useful range at which targets can be

engaged. With the .223 (or .308) the outside range for effective sniping is in the 500-yard framework. Beyond that, windage and bullet drop make everything pretty iffy. When possible, a skillful sniper would probably confine his shots to a 300-yard maximum.

The new .223 bullets are quite lethal.

Like other rifle bullets, the .223 bullet causes damage in two different ways: with high velocity and the "dumping" of energy.

When a bullet travels over 2,000 fps, it pulls air into the wound behind it to create a deadly wound channel that is 30 to 40 times the size of the bullet. Think about that one for a moment: That's a very large hole, almost 4.5 inches in diameter. Though the tissue around the wound springs back, most of the cells in the area are killed and the body suffers an immense shock.

As the rifle bullet falls below 2,000 fps, it becomes—for all practical purposes—an inferior pistol bullet. The only way the .223 bullet can do damage at this lower velocity is to dump its energy. At this point, the rifle bullet's effectiveness depends on how many foot pounds of energy it retains, and how quickly it can transfer this residual energy to its flesh-and-blood target. For the military, the copper-jacketed solid-point .308, rather than the .223, has been used for sniping because the large bullet has more punch at extreme ranges. Though the .223 tumbles on impact at close ranges, thereby dumping its energy, this also degrades its accuracy somewhat and, because the bullet becomes more stable as its speed drops, isn't helpful at long ranges.

The survivalist, however, isn't required to use solid-point bullets. The faster twist barrel, coupled with soft- or hollow-point bullet overcomes the problem of the .223 not dumping its energy. The new 60-, 62-, and 69-grain bullets provide a great deal more energy to dump.

Killing Energy—How much energy is needed for the round to be of use in combat at long ranges?

In close combat, it is ideal to remove your opponent quickly from the stage so that he can't shoot back. That's why the .22 Long Rifle, though lethal, isn't effective in combat. If your opponent is hyped up on adrenalin, the little bullets may not faze him for some time. Those who point out that .22s were used in the attempted assassination on President Reagan should remember that the shooting victims were not expecting trouble and, in fact, once the adrenalin started flowing, the last victim shot, the President, didn't realize for several minutes that he had even been hit.

At longer sniper ranges, things change. At longer distances, it isn't necessary to take an enemy out of action quickly or even to kill him. Sniper fire is harassing technique used to discourage and repel an enemy.

Generally 100 ft-lb of energy is used by



These three variations on the AR-15 theme were built by the author. Top to bottom, they are a 24-inch L.L. Baston heavy barrel, Cherokee cheekpieces, and Choate stock; a standard model rifle with Beeman SS-2 scope; and 20-inch heavy barrel with Long Engineering Quicksite system.

most military authorities as the absolute minimum energy required to wound a man sufficiently to take him out of battle. With that as the "down side" for the .223 bullet, here's a look at what is possible.

Matchmaking—A soft- or hollowpoint 55-grain bullet will have the 108-ft-lb punch out to around 400 yards; a 60-grain bullet would have this capability out to around 500 yards. A sniper using an AR-15 with a fast-twist barrel and some of the new 69-grain commercial bullets, currently being marketed by the Sierra Bullets company under the trade name of "Matching," could extend that .223 range beyond 600 yards.

Because most areas preclude such ranges, and most shooters, if they're honest, aren't capable of making shots at ranges beyond that 600 yards, this range is certainly great enough to be useful for harassment or sniper work in survival situations.

AR Accuracy—Is the AR-15 reliable and accurate enough to be used as a sniper rifle?

Despite what you may have heard, the AR-15 is extremely reliable when used with quality ammunition. During recent tests conducted by NATO to select the best of the new .223 rounds for a joint standard, a number of NATO rifles were used. The testers found the M16 (the military version of the AR-15) to be more reliable than any other rifles chambered for .223, including the French FAMAS, the Belgian FNC, the Galil (used by the Dutch), the Belgium Minimi, and the British EWS! The shooters had no vested interests in proving that the U.S. rifle was superior to the others.

The AR-15 is probably the most reliable .223 caliber weapon available on the market.

And how accurate is an AR-15 sniper rifle?

It depends. Match shooters using

factory stock rifles with metal sights and standard twist, 1 turn in 12 inches, AR-15s (M-16s) can obtain accuracy of slightly more than 2 MOA (Minute Of Angle) with well-made ammunition. That translates to about 2- to 2½-inch groups at 100 yards.

With a scope, faster twist barrel, and the right bullets, it is possible to obtain accuracy that can rival an expensive bolt-action sniper rifle.

Typically, if everything is working at its very best, including the shooter, it should be possible to stay within one MOA angle—1-inch at 100 yards. This accuracy should continue on out to 500 or 600 yards, at which point groups of 5 to 8 inches in diameter can be expected, if shooter, ammunition and rifle are in near perfect form. Beyond that point, wind, variations between cartridge rounds, etc., spread out the group. For best results, carefully hand load your own ammunition and experiment with powder, cartridge, and bullet combinations. Many shooters find that the small 52-grain hollowpoints and the large 62-, 63-, and 69-grain bullets are much more accurate than the 55-grain bullets).

The lesser recoil of the .223, as compared with the .308, and the faster shooting offered by the semi-automatic action, as compared with bolt-action sniper rifles, gather many pluses in the AR-15 sniper rifle's favor.

Kits—Another plus of the AR-15 sniper has over many other rifles is the availability of conversion kits. Such a kit makes it possible to practice with an AR-15 rifle, using very cheap .22 LR ammunition. This, too, can be a real plus for the sniper/regular AR-15 combination. CCI CB Caps are especially useful for nearly silent shots when a situation calls for them.

Easy Assembly—If you own an AR-15, it's fairly easy to turn your standard rifle to a sniper rifle quickly, if you build an upper receiver/barrel assembly. The push-pin/front-pivot pin make it fairly easy—and

quick—to replace one barrel/receiver assembly with another. Thus, you can enjoy the advantages of owning two rifles for the price of one-and-a-half rifles or even for just the price of one of the "Big Price Tag" sniper rifles on the market.

Building a complete AR-15 sniper rifle is a good do-it-yourself project, and not any harder than building a regular AR-15 rifle and certainly much easier than building a Colt .45 auto. (See "SM-15," *Survival Guide*, December, 1983, for an overview of how to build your own AR-15 rifle. A detailed, step-by-step guide for building the rifle is presented in the author's new book about the AR-15, to be available from Paladin Press, P.O. Box 1307, Dept. ASG, Boulder, CO 80306.) If you're a little leery of building a rifle, it is also possible to have one made to your specifications, including a sniper rifle, by Springfield Armory, Dept. ASG, 420 W. Main St., Geneseo, IL 61254. Springfield will even give you credit if you wish to exchange your parts for their parts.

Twist—To take advantage of the accuracy and range potential of the new .223 bullets available to handloaders, purchase a heavy barrel with a fast twist of 1 turn per 9 inches of barrel, rather than the 1-in-12-inches turn of the standard AR-15. Though the faster twist may be a handicap to the lethality of the .223 bullet with solid points, which the military must use because of conventions of war, soft points or hollowpoints will deliver the lethality required for survival or self-defense use.

You'll probably want a 24-inch heavy barrel. This offers some added velocity and increases the lethality of the bullets.

Excellent 24-inch heavy barrels with a 1-to-9 twist are being offered by L.L. Baston Co., Box 1995, Dept. ASG, El Dorado, AR 71730, for \$100. The barrel is all that's needed to convert a standard AR-15 to a heavy barrel rifle. All standard upper receiver parts will fit the heavy barrel. If you are building an upper



LEFT — This is the Harris bipod mounted on an AR-15 sniper rifle.

ABOVE and RIGHT — These two views show the controls on the Tasco range-finding/trajectory scope. The scope can be calibrated for "Elk, Muledeer/Sheep, White-Tail Deer/Bear, and Antelope."



AR-15 SNIPER



This is the Choate stock for the AR-15.



The Brigade Quartermaster scope mount permits retention of the original carrying handle, but positions the scope quite high, making a cheekpiece almost mandatory.



The Long Engineering Quicksight System employs a modified receiver, from which the carrying handle has been machined away. This Long is no relation to author Long.

receiver/barrel assembly, L.L. Baston also offers heavy barrel kits which include the barrel, handguards, suppressor, gas tube, etc., to build the assembly, if you add your own receiver, plus the forward-assist assembly and rear sight if desired. The Baston 24-inch heavy barrel parts kit is priced at \$181.

Flash suppressors, which compensate for muzzle climb, are not called for because a sniper rifle is normally not "quick fired," and the weight of the rifle keeps barrel climb very small. A standard military flash suppressor works just fine. It is also possible to purchase extended barrels which are crowned without flash suppressor threads. Exposing the muzzle means one crunch into something could destroy the barrel's accuracy.

Muzzle Brake—If you wish to neutralize the last bit of the muzzle climb, then consider using the Mil/Brake flash suppressor, formerly called the Muzzle Mizer, from DTA, 3333 Midway Dr., Suite 102-L, Dept. ASG, San Diego, CA 92110. It is threaded to replace the standard flash suppressor of an AR-15, and its price is \$25.

The Mil/Brake reduces flash as well as that of a standard AR-15 flash suppressor so that flash is scarcely discernible during night shooting, but also compensates for muzzle drift to the right, or left, if you're left handed, as well as the upward movement of the rifle with each shot. Additionally it increases the bullet's velocity by about 20 fps.

Standard handguards will fit on the extended barrels, but because the barrel on an AR-15 can flex slightly when excessive pressure is placed on the handguard or barrel, causing its point of impact to change a few inches. This is temporary—the barrel springs back once the pressure is removed—but can be disconcerting when you're not aware of it. A bipod, or hasty-sling hold can create a shift of impact up or down. You can compensate for this if you are aware of it and have practiced with your gear.

Although barrel flex isn't much of a problem with the heavy barrel, a match handguard can do away with the problem and is desirable for the ultimate accuracy, if you need to use a bipod or are accustomed to using the sling to steady the rifle.

The match handguard is a solid piece of

steel which screws around the receiver of the rifle so that the barrel is free-floating. This means that a bipod mounted on the handguard, or a tight sling fastened to the handguard, rather than the barrel mount, won't cause the barrel to flex. All shots will remain on the same zero, regardless of the position from which they are fired.

There is a price to pay: The steel match handguard is *heavy*, 2 pounds. Coupled with the heavy barrel, an AR-15 sniper rifle can weigh in at 11 or 12 pounds. That's heavy for anyone who's used to carrying an AR-15, though almost normal for those people who insist on HK-91s or M14s. There is a silver lining: The weight absorbs recoil to the point that it is almost nonexistent.

Excellent match handguards, at \$30 each, along with a broad assortment of other parts for building an AR-15 sniper rifle, are available from Rock Island Armory, 420 West Main St., Dept. ASG, Geneseo, IL 61254.

Stocks—If you're over 5½ feet tall, you should consider adding a longer stock to your AR-15. This will aid you if you ever have to spend some time peering through the scope at a possible target. Your muscles will thank you if you have the extra ¾ inch on the stock!

Currently, the only stock available on the market with the extra length is the new E2 stock, priced at \$30, from Choate Machine and Tool, Box 218, Dept. ASG, Bald Knob, AR 72010.

The Choate stock, at the author's urging, has a small hook so that the shooter can push it back against his shoulder when firing in the prone position. Although the prone position and bipod aren't used that often in modern combat, they are useful for sniper work and it's nice to have the option and it certainly doesn't detract from the usefulness of the tough Zytel stock.

The E2 stock is mounted by removing the original trapdoor assembly, slipping off the stock, pushing on the E2 stock, and replacing the trap door.

Tactics—Whenever most people think of snipers, the picture is of some GI on his stomach, using a bipod with the rifle. In most areas of the world, according to military studies, ground vegetation makes

it next to impossible to obtain a clear shot at an opponent when shooting from the prone position. And, if you find such a position, you will be easy to locate for return fire. Thus, most shooting in combat is done while sitting, kneeling, or standing.

There are exceptions of course. If you are firing from a prepared, fixed position with a clear field of fire or in an urban environment, then a bipod might be useful. An old hat or pile of rags often works just as well.

There is one bipod available for the AR-15 sniper rifle that gets around a lot of problems, though. It's the Harris bipod, available for \$44.50 from Harris Engineering, Barlow, KY 42024. It works well and is very light and rugged.

The best part of the Harris bipod is the fact that it is available in two styles: the standard 1A-LR and the 1A-HR which has extra-long legs that permits shooting from a sitting position. The ability to shoot from a low, sitting position overcomes rare use of the prone position in combat. With the option of sitting up, you can use the bipod to good effect in most terrain.

The Harris bipod can be mounted on the AR-15 by removing the front swivel, then enlarging the swivel hole slightly. After this is done, the unit clamps into the holes and is tightened up so that the bipod is attached firmly.

As stated above, a bipod can change the point of impact, especially if some of the shooting is done standing with the bipod on the barrel and some of it with the bipod resting on the ground. If you use a bipod some of the time, use a metal match handguard with the bipod mounted on the handguard.

Scopes—Unless you're making a "war game" rifle and are confined by rules that forbid use of scopes, you'll probably wish to mount a scope on your sniper rifle.

There are two routes that are taken to put a scope mount on an AR-15. One does away with the metal sights, while the other mounts the scope high on the carrying-handle/rear-sight base.

In theory, it is good to keep the metal sights: if you damage your scope you can still use the sights. But by reason of the weight of the rifle, it is hard to imagine using it for anything other than sniper work. If the scope failed, the distance

would probably be too great to rely on the metallic sights. Therefore, many owners of AR-15 sniper rifles may wish to do away with the sights and just use the scope. Also, an old sage once pointed out that you can always carry a spare scope that will be more accurate than the metallic sights.

It is only possible to remove the rear-sight/carrying-handle assembly when you are skilled at metal work and have access to some expensive equipment. An easier route is to buy a receiver with the sight removed and a scope base in place.

This useful upper receiver modification—sold under the name of the Quicksight System—is perfect for a do-it-yourself sniper rifle. It's a bolt-assist receiver, which has the carrying-handle/rear-sight assembly milled off and a standard scope base placed securely on top of the receiver. This is a major improvement because it does away with the need for a cheek pad and keeps the scope from getting caught in brush or the like when you're carrying the rifle.

How about the front sight base?

Though the scope mounted on the Quicksight System receiver will work without removal of the front sight post, taking off the front sight will make a brighter "picture" during low-level light conditions.

Removing the front sight base is fairly easy and doesn't require any special tools. Just use a hack saw to cut through the mount above the gas tube area, then use a grinder and file to smooth up the cut. Touch-up gun blue will allow you to get a nice dark finish so that your work doesn't show in the form of exposed bright metal.

If you have two AR-15 rifles or use two receivers which you exchange back and forth for sniper/regular rifle use, the Quicksight will allow you to use the same cheek weld and look at the same point when sighting in either the scope on the sniper rifle or the metal sights on the standard rifle. That helps when you switch from one rifle to the other.

The Quicksight System receiver is available at \$149 each, from Long Engineering, 4340 Eaglemere Ct., SE, Dept. ASG, Cedar Rapids, IA 52403. Also, the company will modify your own upper receiver to the Quicksight configuration, if you wish.

Those who wish to retain the metal sights will need a scope mount that rests in the carrying handle channel of the AR-15.

A scope mount is available for \$16 from Brigade Quartermasters, 266 Roswell St., Dept. ASG, Marietta, GA 30060. Called the "ART-504 Scope Mount," the unit is made of aluminum and looks like an extension of the carrying handle as it has a loop at the front that goes down almost to the weld ring. The mount fits well in most AR-15s though some may require a little fitting because the tolerances vary somewhat from carrying handle to carrying handle.

Fitting is accomplished easily. Just take a flat file to remove some metal on the

mount if your AR-15 has a tapered weld ring, because the mount seems to have been designed for the old flat ring. The file work is easy; the mount is aluminum. Just go slowly and keep trying the fit. Remember that you can't put the metal back once it is removed! Use some black spray paint to touch up the mount after you're finished.

The ART-504 does not come with scope rings, probably because of the varied needs of users. Because of the wide selection of rings, the best way to find the rings you need is to go into a gun shop with your rifle, mount, and scope, and find some rings that work with your rifle and mount. Ordering rings through the mail can be a little frustrating when you don't know exactly how they'll work until you finally get them.

Another good "in-the-handle" mount is offered by B-Square Company, Box 11281, Dept. ASG, Fort Worth, TX 76109. It is supplied with its own scope rings and is available only for 1-inch diameter scope tubes.

Most shooters discover that getting a good cheek weld is pretty hard with the high-ridding handle-mounted scopes. An accessory that gives the shooter a cheek weld needed for good shooting is the urethane Cheekpiece available for \$42 from Cherokee Gun Accessories, 830 Woodside Rd., Dept. ASG, Redwood City, CA 94061. It attaches to the stock by a strap or velcro connector and allows you to have a proper cheek weld when using a scope.

If you use the longer Choate stock on your rifle, you may wish to cut off the appendage that extends out the front of the Cheekpiece. In heavy brush the extension tends to get caught in branches and becomes a real bother.

The final accessory for an AR-15 sniper rifle is a good scope. Though a scope won't change a poor shooter into Sgt. York, it makes possible precise marksmanship from unbelievable distances. Scopes are especially helpful, too, for people who have vision problems when using iron sights.

Buying—There are a lot of options when it comes to buying a scope. One choice available is the variable scope. This offers the user a choice of target magnification, usually between 3 times and 7 or 9 times as large as the apparent size of the target as seen with the unaided eye.

Range-finding/compensating scopes are usually variable scopes which can also move the zero up or down according to a range scale on the scope to compensate for bullet drop. These are probably the ideal scopes for sniper work. They are a little bit more sensitive to abuse, cost more, and must be compatible with the ammunition you use.

Most range-finding scopes work by having you bracket some object of known size between two cross wires. With hunting scopes, the known size object is usually the animal's body. With combat scopes, a

man's upper body. With a little figuring, you can adapt the hunting scope to combat use, or vice versa. Once the object of known size is bracketed by the cross hairs, you check the scale on the variable magnification control to determine the range. Some scopes have this range shown in the scope picture, others present it on the adjusting ring outside the scope. Once the range is gauged, it's necessary to adjust the bullet drop compensator scale so it reads the same distance as the scale on the magnification control. Finally you adjust your magnification to suit your needs and fire the shot.

Fortunately, it does take longer to read what you must do than it does to do it.

Good ranging scopes are the ARC and RAC by Burris, the BDC scopes by Bushnell, Redfield's Accu-Trac scopes, and Tasco's Range Finding-Trajectory scopes. New, tougher models are ever being added to the marketplace, so your best bet is to go to a gun shop and buy one of these companies' newest scopes which seems to best suit your needs. Avoid off-brand range finding scopes as they may not hold zero as you change magnification!

Parts—The U.S. Military used commercial scopes for snipers for a time, but soon created its own ART (Automatic Ranging Telescope) system. The ART scopes have the range-scale/bullet-drop compensator and magnification adjustment coupled together so that when the two cross hairs bracket an 18-inch object, the range compensation is right and the shot can be fired. This makes for very quick shooting. The U.S. Military ART scopes are only for the serious: they carry a \$600-plus price tag. Unless you're really into long-range shooting, it would be difficult to justify such an expense. For information about military ART scopes, write: Leatherwood Enterprises, Box 111, Dept. ASG, Stephenville, TX 76401.

Fixed-power scopes are tougher than others of the hunting scopes, and last longer than the variables and range-finding scopes, except perhaps for the ART scopes. They also are much less expensive so you spend your money on quality, rather than complexity. The power most people seem to choose is the 4X scope, but you may wish greater magnification, if you intend to use the scope only for sniper work.

A number of small "combat" scopes are available for the AR-15. Though they don't have quite as good optics as larger scopes, they also are easier to carry and are more resistant to abuse in the field. The scopes are expensive, but are an option you may wish to consider. The Colt scope along with its integral mount is available for \$172 (fixed, 3- or 4-power) from Colt, Box 40000, Dept. ASG, Hartford, CT 06151. Similar scopes are marketed by Beeman Precision Arms, 47 Paul Dr., Dept. ASG, San Rafael, CA 94903; the SS-2 with bullet

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SHERIDAN CO₂ PPP

Here's a new weapons line for those who seek raw paint-pellet-power...

Staff Evaluation

Photos by Dave Epperson and Jim Benson

NOWADAYS, ANYONE who hasn't heard of, or competed in, the National Survival Game probably has been dwelling on the backside of the planet Pluto for the past three years.

Briefly, for those just returned from outer space, the game is one of "shoot your friends and associates, and capture their flag for the glory of your A Team." This is good stuff, the stuff of which cops-and-robbers, and cowboys-and-Indians battles are made. It's a great game of cunning and stealth, shoot and splatter, paint or be painted, onward to victory.

Anyone who has tried the Survival Game, or one of its several indoor or outdoor imitators, finds this sport is heart-pounding entertainment. For some, the game is a means to train for real-world survival in future times. For others, it is mere addiction.

What's new in the combat games realm, though, is weaponry—raw paint-pellet power.

PPP and PPR—Pursuit Marketing, Inc., of Evanston, Illinois, lately has introduced the Sheridan CO₂ Powered Paint Pistol (PPP), a firefight-tun weapon that is competitive with the more-or-less standard Nelspot 007 paint marker handgun. Moreover, by the time this article reaches print, Pursuit Marketing will be offering a CO₂ Powered Paint Rifle (PPR) to the blast-your-best-buddy crowd. The PPP and PPR fire .68 caliber red or blue paint marking pellets approximately 100 feet with some degree of effectiveness.

The sample Pursuit Marketing supplied to *American Survival Guide* for evaluation was the handgun, as the rifle was not yet available for testing.

The Technicals—The PPP is essentially a spinoff of the Sheridan Model E CO₂ 5mm pellet gun. The PPP has what appear to be three barrels. Top to bottom, these are a 10-paint-pellet tubular magazine, a smooth-bore barrel from which the paint pellet is expelled by expanding CO₂ gas, and the CO₂ propellant cartridge tube for containment of a 12-gram compressed carbon dioxide gas cylinder.

To charge the PPP, it is necessary to unscrew the fore-end cap of the gas cylinder tube and insert a CO₂ cylinder.

The 12-gram cylinder's seal is forced against the internal piercer by screwing the endcap into the threaded cylinder tube.

Next, the aluminum rear end cap is removed from the top tube, the magazine is topped-up with paint pellets, and the end cap is replaced and turned clockwise to lock the magazine closed.

Finally, the cocking knob at the rear of the barrel is rotated a quarter-turn counterclockwise to unlock the bolt, and then is drawn rearward 1 1/16 inches, a motion that requires some 16 pounds of pull. Drawing the knob rearward serves two purposes: (1) to allow a paint pellet to gravity feed from the magazine tube into the PPP's open chamber, and (2) to cock the trigger-sear/compressed-gas-release mechanism for a shot. The PPP's safety is a simple trigger block that shows red for "Fire" at the left when everything is ready.

When the trigger is squeezed—about a 4-pound effort—CO₂ is valved up from the lower chamber through an orifice in the bottom of the barrel. The decompressing carbon dioxide pops the pellet

out of the barrel.

The pellet-loading and cocking drill must be repeated for each of the succeeding 9 shots.

Because the three tubes are stacked one above the other, the Sheridan PPP's sight picture requires a bit of getting used to, but it's really not a problem.

The sights, blade front, adjustable notch rear, are not what one would term up to combat standards, but in a plastic pellet firefight sights don't receive much use anyway.

Manufacturer—The PPP's brass tubes, knurled knobs and investment cast grip frame and trigger guard are of more than medium quality, certainly of higher quality than would be expected in a game-player handgun.

The plastic checkered thumbrest grips fitted all ASG staffers well.

Overall, with sandblasted black finish, simulated wood grips and bright aluminum knurlings, the Sheridan PPP is as handsome as a true firearm. And its three barrels give it a futuristic, laser-gun appearance. At about \$150, sug-

SHERIDAN CO₂ PPP: TECH SPECS

Caliber.....	.68
Action.....	single-shot
Operation.....	carbon dioxide propulsion
Magazine capacity, rounds.....	10
Lengths:	
Barrel, inches.....	6.500
Overall, inches.....	9.188
Height, overall, inches.....	6.563
Weight, empty, pounds.....	2.156
Width, at grips, inches.....	1.313
Trigger pull, pounds.....	4.063
Sights:	
Front.....	blade on ramp
Rear.....	adjustable square notch
Radius, inches.....	7.125
Firings per CO ₂ cylinder.....	40/12 grams
Prices, suggested retail:	
Sheridan CO ₂ Powered Paint Pistol.....	\$150
Sheridan CO ₂ Powered Paint Rifle.....	\$175
Manufacturer.....	Sheridan Air Gun Division Benjamin Air Rifle Company 3205 Sheridan Road Racine, WI 53403
Distributor.....	Pursuit Marketing, Inc. 740 Hinman Ave. Evanston, IL 60202 Phone: (312) 864-1435

From 5 yards, the Sheridan PPP was accurate, but some pellets bounced off.



Here the pellet-loading end cap is removed.



Ten paint pellets fill the tubular magazine.



A 12-gram CO₂ cylinder is inserted.



The cocking knob is drawn rearward to admit a pellet.

gested retail, the PPP is a bargain for the combat weekend warrior.

The Shoot—ASG's crew took the Sheridan CO₂ handgun along on a day's shoot that comprised some fairly heavy-duty weaponry. The PPP was fired as the final handgun of the session, sort of

a gunny treat for the troops.

The Sheridan PPP was charged and loaded as described earlier, and was fired first at a full scale FBI-style torso target. From a distance of 5 yards, the PPP was capable of kill shots on the target—centering the chest or head of the black upper-body representation. Though hits

were scored, and the paper-over-cardboard target was dented, some of the paint pellets failed to “detonate”—that is, break open to supply the characteristic Survival Game splatter that marks a kill. The ASG crew examined the fired but unruptured pellets and determined

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Forging a Blade:

KNIFESMITH

Here's how to work raw steel into a finished knife—by hand...

By Jim Thompson



ABOVE — A soon-to-be Kruse knife is brought to critical temperature in the forge.

LEFT — Martin Kruse starts beating a piece of stock into a flat chunk of steel.



Descaled steel — silver in color — has just been placed on a pre-heat slab.

CAREFUL READING reveals the famous Japanese “sword of a thousand folds,” or the Damascus blade, or the Scottish claymore, or the Bowie, or the Arkansas toothpick.

Japanese artisans produced the wonderful, laminated, labor-intensive blade during the swordsmiths’ golden age. The Damascus blade was both beautiful and utilitarian. Claymore and Bowie were general purpose killing tools of their respective eras. The Arkansas toothpick, more than any of Colonel Colt’s products, helped to win the West.

To learn how these blades were made by craftsmen of their times is to become aware of the difficulties involved in making general-purpose blades, cutlery that is

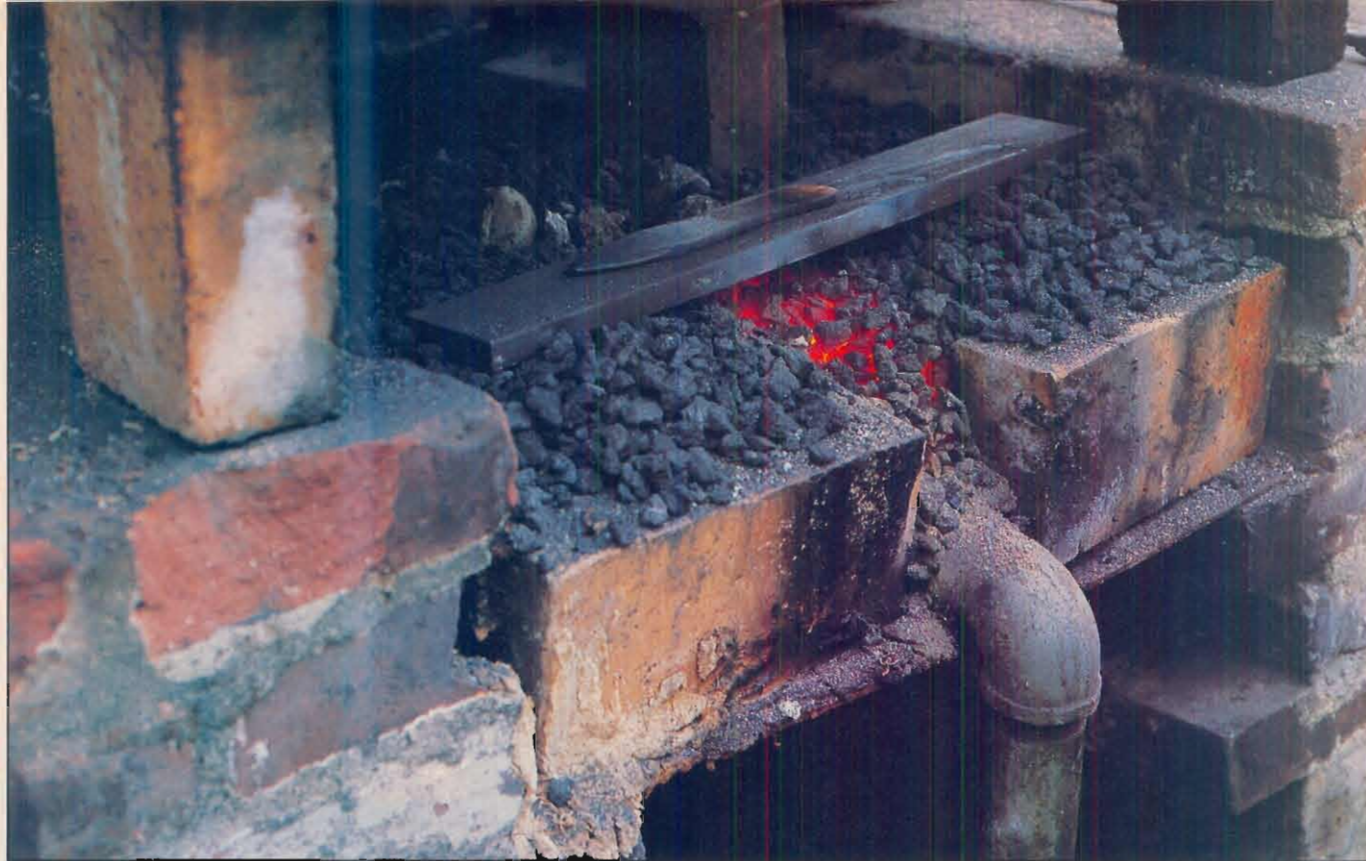
capable of taking and holding an edge.

Unlike a tool such as a file, a working blade cannot be hard to the point of brittleness, else it will break at a critical time. The knife’s tang/ricasso area should be particularly flexible because when making deep cuts it may be used as a lever or crowbar. In the tang, hardness is more of a problem than an asset. If knives were blades only, making only single, predictable cuts, then the only trick involved would be keeping the blade sharp. In the real world, uniform knife applications are rare.

Making Knives—Fabricating a knife by hand from scratch is the business of Martin Kruse. He attacks the problem as

would a survivalist in a community where hydraulically blanked blades, commercially sharpened would be unavailable. Watching Kruse work raw steel, forming it into a finished knife is a story told in accompanying photos. Should readers wish to give knifemaking a try, Kruse suggests purchase of a great deal of stock, watching a knifemsmith at work, reading much about knifemaking, being prepared to waste a lot of metal, and purchase of a supply of burn ointment—it’s needed.

The Forge—A proper forge isn’t much different from an outdoor fireplace, except that a means of forcing air through the fire under controlled conditions is an absolute necessity, using the bellows or a ducted



On the pre-heat slab, temper starts to run through the blade, spreading outward.



Kruse quenches a blade in olive oil, which is cleaner than petroleum.



Here a steel rod is heated with the forge blower intensifying the temperature.

fan blower. Quenching liquid must be provided in a tub or barrel. Kruse uses olive oil for relatively slow quenching, as it is much cleaner than petroleum oil.

Custom, hand-worked blades begin and end with higher quality materials and craftsmanship than factory-made blades. And the differential tempering of the blade—by hand—offers different properties to the various areas of the knife, the physical functions of which vary greatly.

A glossary that should prove of help in understanding knifemaking processes follows.

Alloy—A mixture of various metals, the makeup of which determines the crystalline structure, corrosion resistance,

hardness, and malleability of metals, especially steel. Common alloying elements are carbon, nickel, chromium, manganese, molybdenum and tungsten.

Anneal—Softening metal, as when steel is heated, then slowly cooled. Kruse uses ash to cover annealing metal to permit it to cool slowly and uniformly.

Anvil—A flat and/or curved surface of heavy steel on which metal is hammered and/or shaped.

Borax—A mineral substance used as welding flux in Damascus and other processes to seal out oxygen. The Borax forms a hard scale.

Brine—Water with high salt content, sometimes used as a quenching medium.

Carbon Content—The amount of carbon in steel, which is its hardness determinant.

Charcoal—Wood which has been heated to ignition temperature in the absence of oxygen, producing nearly pure carbon.

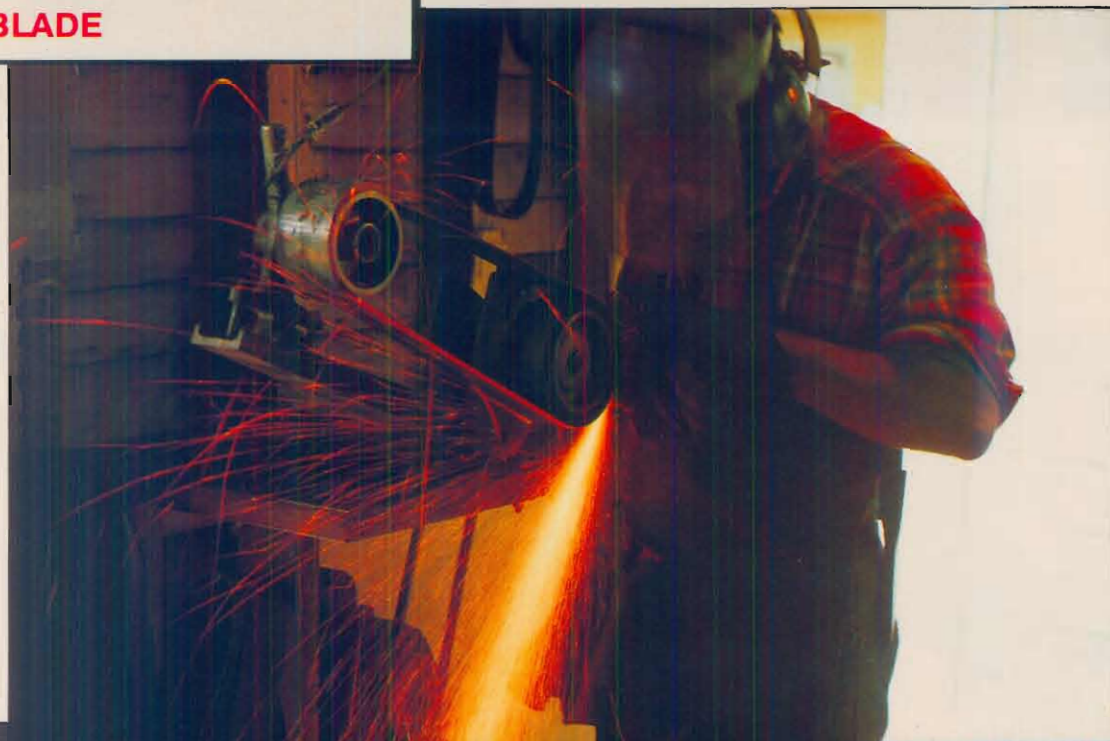
Coke—Coal which has been burned in the absence of oxygen, creating a fuel of intense energy release. Also very nearly pure carbon.

Point of Decalcence—The temperature at which steel molecules are in a state of flux, which allows hardening by quenching or sudden cooling.

Draw—To flatten or extend by heating and hammering, to stretch heat to a given tempering color.

Heat Treating—Hardening and tempering steels and other metals.

BLADE



Prior to hardening and tempering, the knife's approximate contours are formed on a belt grinder.



Examples of Kruse's work include these mirror polished boot knives and black-oxide combat knives.



And here are a 4-inch ornamental Skinner, a black combat knife, and a caping knife.

Leaf Spring—A spring composed of flat or arced layers (leaves) of flexible steel.

Mild Steel—Steel with little or no carbon content. Mild steel cannot be hardened to any great degree.

Normalize—To cool a heated metal in air to its normal hardness.

Quench—To harden heated metal by immersing it in liquid.

Scale—Oxidized metal which forms in thin sheets through heating or working metal, a waste product.

Spring Steel—Steel of high carbon content used for springs. This steel is approximately 0.6 percent carbon, with some tungsten and manganese in the alloy. Slow cooling and uniform heat are used in tempering spring steel.

Steel—Iron with carbon in it.

Temper—To regulate the hardness of steel by controlled heating after it has been hardened.

Temper-Drawing—Tempering, the

taking out of quench hardness to a desired degree by controlled heat. The second stage in heat treatment.

Tempering Fluids—Brine, water, or oils used to quench heated steel.

Tool Steel—Steel of hard carbon content used for tools to work other metals cold. These steels are often too hard to be used for knives without modification by tempering.

Materials—Kruse's knives are made from virgin materials, though many of his forge tools are made from salvaged metal. Early in his career, Kruse gained experience by making knives and other cutting tools from scrap, hence he has a thorough background in metallurgy.

One amateur adventure against which Kruse warns specifically is the off-cited "make-a-knife-from-a-file" routine.

A much better practice—and much less work—is for the beginner to choose an automobile leaf spring or a saw blade

from which to fashion a knife. Files are *very* hard, and difficult to make.

Save the file. Use a spring.

Spring steel, in general, is a quality knife material, presuming it is worked properly. Automotive drive axle shafts are useable in the main, though they often do not contain sufficient quantities of carbon to be truly hard. For single or short-term blades, almost any material can be used, but durability will vary greatly. Stainless steel should be used only for blades that must be corrosion resistant. Stainless is difficult to work, and some authorities question its capability to hold an edge. Moreover, there is disagreement about its hardness.

Working with minimal materials and not at great expense, infinite patience can produce a useable blade for almost anyone. Overall temperature control and final sharpening are of great importance.

He who can fashion his own blade is truly a survivalist. ●

Custom:

FROM THE FORGE

Kruse and his helper make blades that can't be broken...

Staff Report

KNIVES SHOWN herewith are hand-made products from Martin Kruse's forge. The large skeleton knife was made by Kruse, as was the boot dagger. The drop-point utility hunter was made by Mark Ricards, a high school senior who is learning the blade trade.

The three knives were borrowed from Kruse for evaluation by the *American Survival Guide* staff. "Hack, cut, slash or pry anything you want with 'em," Kruse directed.

The large skeleton knife, a model that Kruse has designated No. 1 in his series is 11½ inches in overall length. With the tang wrapped in 24 turns of parachute cord, the knife weighs a formidable 15 ounces. The parachute cord provides a firm, non-slip grip, but it can be removed for other uses. Holes in the tang and its contours make for a firm grasp on the bare tang.

The No. 1 is forged from high-carbon 5160 spring steel, hardened to an average

of 56 on the Rockwell C scale, 48C on the back of the spine, 40C through the tang, and 58C at the point. (Factory made knives are heat treated uniformly to a hardness that is the same throughout the steel).

Break It!—The No. 1, was given the ASG "Try To Break It Test." Staffers failed to fracture the blade or tang while using the blade as a lever to pry up various objects of increasing weights. From the staff point of view, the test failed. From the No. 1 reference point, the tests were a complete success.

For various cuts, ranging from foods to 2x4s, the No. 1 held a useful cutting edge, requiring only a "tune-up" on a ceramic sharpener to keep its edge in top working shape.

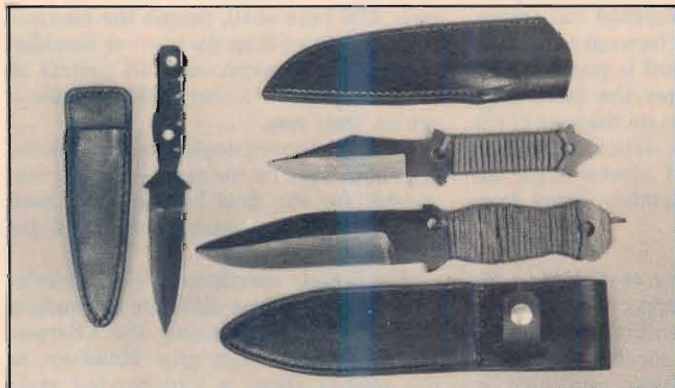
Teen-ager Ricards' drop-point utility hunter also was parachute-cord-wrapped at the tang. The knife was 9 7/16 inches long overall, and with the cord grip

wrapping weighed 8½ ounces. Pry and cut tests similar to those for the No. 1 were administered. Again nothing failed while the knife held a keen edge.

The boot knife made by Kruse was simply a double-edged weapon for use primarily as a sticker. Its tang is simply a flat steel extension of the blade. The tang of the boot knife is drilled and contoured to accept parachute cord windings. As with any boot dagger, knowledge of how to deliver a killing stroke is perhaps more important than the knife itself. ASG's crew did not investigate this area of bladesmanship.

Kruse will create hand-tempered knives to order at prices ranging from \$75 to several hundred dollars for ornamental, mirror-polished and rare-wood gripped blades. Custom sheaths also may be ordered.

Contact Martin Kruse, P.O. Box 596, Dept. ASG, Tujunga, CA 91042; phone (818) 794-6741. •



These knives are products of knifemaker Martin Kruse and his high-schooler helper Mark Ricards.



Kruse's No. 1 is a black-oxidized, parachute-cord-wrapped 11-inch.



Ricard's drop point, also oxidized and cord-wrapped is over 9 inches long.



The super-sharp Kruse boot knife is an item that's carried in case of need.

All-Purpose:

SNAKE CHARMER II

For woodsman's kit, home protection, backpacking and saltwater voyaging...

Staff Evaluation

INDEED, IT'S a charming little shotgun, the Snake Charmer II, made by Sporting Arms of Dallas, Texas. Like its earlier brethren, it's a single-shot, stainless steel .410 gauge firearm for the woodsman's kit, around the ranch, home protection, backpacking and saltwater voyaging, as well as the occasional shooting of snakes, if desired.

The Snake Charmer II, unlike the original model, features a positive safety, more about which further along in this article. Otherwise, the 1985 Snake Charmer is much like its elder counterpart.

All Snake Charmers feature a thumbhole plastic stock with a four-round extra shell compartment in the butt. This compartment has a sliding plastic cover which, when the Snake Charmer is subjected to violent shaking, slides loose. A bit of black plastic electricians' tape secures the lid until opening becomes necessary. The Charmer is fitted with a plastic fore-end, fixed to a barrel boss with a Phillips-head screw.

A new variant on the Snake Charmer theme is the Night Charmer II which, when a switch is thumbed, illuminates a target and, moreover, supplies a pie-section aiming shadow for the shooter. Shadow on target, fire, and the shot charge enters the target just below the apex of the triangular segment. A lithium battery, rated at 3.6 volts supplies power for the lamp that is equipped with a narrow-beam focusing lens. The battery is said to have a 10-year shelf-life.

Still another variation is the Sea Charmer, which is coated with Nedox, a teflon-infused electroless nickel material. The coating gives the firearm's metal parts a gold-anodized appearance, and protects the metal against saltwater, snow, condensation moisture and rough handling, and also smooths-up the Charmer's action. The Nedox exterior coating varies from 0.0007 to 0.001 inch in thickness. All internal metal parts—and there aren't many—get a 0.0003-inch application of Nedox. The coating material increases the surface hardness—read resistance to scuffs and scratches—of the Sea Charmer's stainless parts to a hardness of 62 to 65 on the Rockwell C Scale.

The model supplied to *American Survival Guide* for evaluation was a plain-

jane Snake Charmer II, neither a night-shooter nor anti-salt sailor.

The Action—What could be simpler? The Snake Charmer's firing mechanism comprises a hammer, a trigger, a hammer spring, a trigger spring, a firing pin and a firing pin spring. When the hammer is cocked, the hammer is put against spring tension, while the hammer notch engages the trigger sear, as it overcomes trigger spring tension. When the trigger is squeezed, the trigger sear disengages from the hammer notch, and the face of the hammer makes contact with the rear of the firing pin, causing it to protude from the breech face and ignite the primer of the shell in the chamber. After its job is done, the firing pin recedes into the breech face, positioned by its circumferential coil spring.

A latch lever in the forward contour of the plastic trigger guard is pressed rearward which disengages the latch dogs from two locking spurs on the rear of the barrel lump. As the action is broken open a spring-loaded ejector flips the empty out of the chamber, away from the shooter.

Safety II—Equally as simple is the Snake Charmer II's safety. The device is a hammer block. When the safety bar at the right side of the receiver is rotated to a horizontal position, and held in place by a spring detent, two red-painted dots appear, indicating "Fire." Rotating

the bar to a vertical position causes the bar to cover the red dots, and the Charmer II is on "Safe." the safety mechanism is just a 3/16-inch diameter shaft extending through the receiver. In the center of the shaft, half the metal has been milled away, so that when the bar knob is in the horizontal firing position, the hammer can fly forward into the mill-cut space. When the knob bar is vertical, the hammer neck makes contact with the full-round side of the safety shaft, and thus the hammer face cannot strike the head of the firing pin. This safety is both non-complex and utterly reliable.

Evaluation—In all respects, the Snake Charmer performed as ASG staffers believe it was designed to do: load a 3-inch .410 bore shell, thumb the hammer back, and shoot from the hip—or shoulder. Trigger the firearm, and 18 pellets of No. 2 buckshot—1 ounce of lead balls—are on their way.

As the accompanying photo shows, hip shots were on the mark—a little low, maybe, for the first hipshot, but good enough to be a manstopper with a gut shot.

The female members of ASG's evaluation crew found no difficulty in handling .410 hipshots while using the Charmer II's thumbhole stock grip. However, as the photos show, a ham-handed male staffer found the thumbhole uncomfortable for his bony thumb and chose to

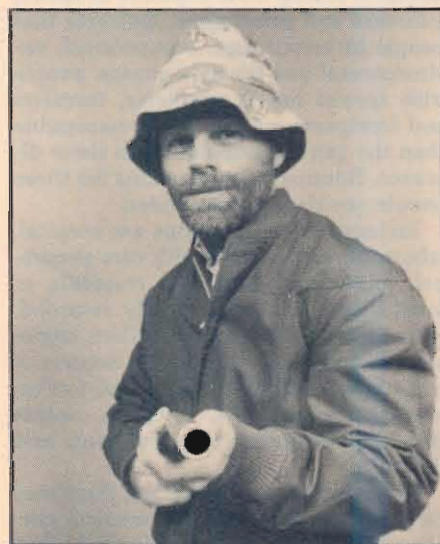
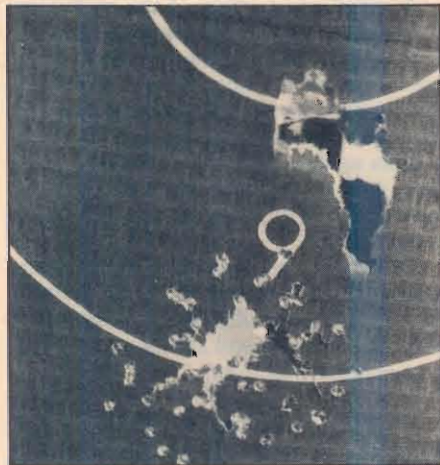
SNAKE CHARMER II: TECH SPECS

Bore410 (3-inch)
Action	single-shot
Operation	exposed hammer
Capacity, rounds	1
Lengths:	
Barrel, inches	18.125
Overall, inches	28.063
Weight, pounds	3.560
Sights	none
Prices, suggested retail:	
Snake Charmer II	\$116
Night Charmer	\$124
Sea Charmer	\$144

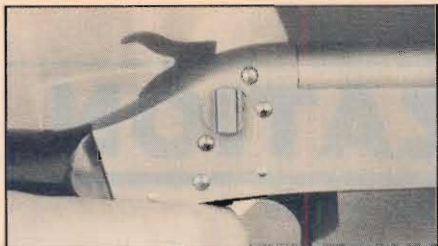
Manufacturer..... Sporting Arms, Inc.
12923 Valley Branch
Dallas, TX 75234
Phones:
(800) 762-5344, toll-free
(214) 243-8124, collect, in Texas



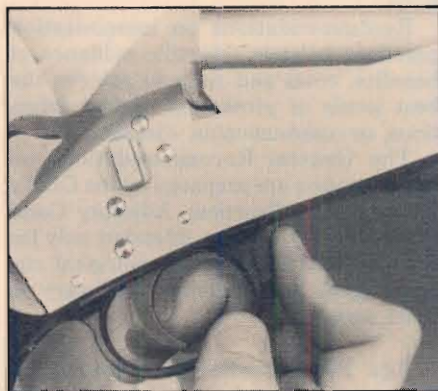
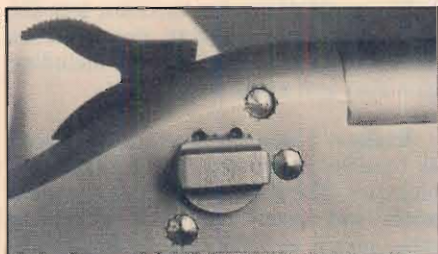
ABOVE and BELOW — Women experienced no difficulty firing the Snake Charmer II from the hip. Hip shooters tended to aim low, but the charge would have produced results in a live target.



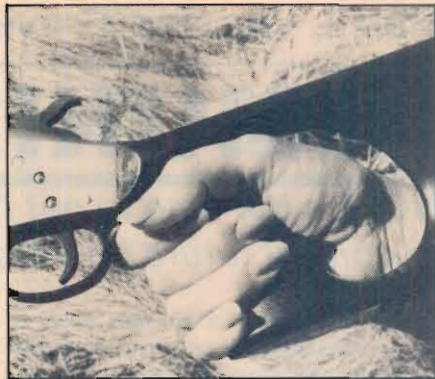
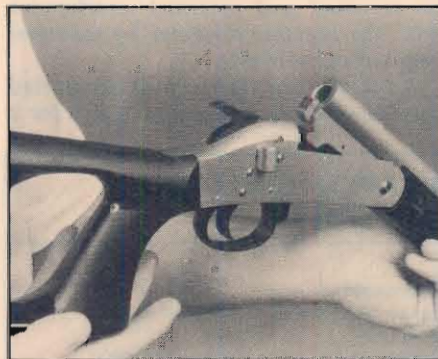
Somehow that .410 muzzle seems bigger when viewed from this end.



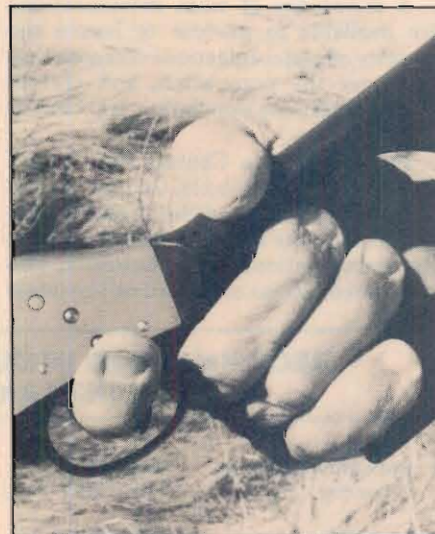
ABOVE and BELOW — Safety bar in the vertical position, the Charmer's hammer face can't contact the rear of the firing pin. Horizontal, the red dots are exposed, and the hammer can contact the firing pin to detonate the .410 primer.



ABOVE and BELOW — Press the lever at the forward part of the plastic trigger guard, and the lock is released. The ejector springs out automatically when the action is broken open.



ABOVE and BELOW — The woman's well-manicured hand fits well in the Charmer's thumbhole stock, but the big male hand is a misfit. An over-the-stock grip was preferred by the large person.



grip over the top of the stock, rather than through the hole.

A Survival weapon the Snake Charmer II is not. Its single-shot nature separates it from the realm of true survival firearms. However, looking down the bore of a .410 is an intimidating experience. The little shotgun can be used to rid a dwelling or out building of pests, or to forage for food, or kill a snake. (Killing snakes, though, makes them unavailable for food

at a later time of survival necessity, and is guaranteed to increase the rodent population—3,000 uneaten live rats remaining per snake killed).

As a take-along security-blanket sort of firearm, the Snake Charmer II is just right. It will ride forever behind the seat of a pickup truck. Taken down, it can be carried easily in a seabag or rucksack. The owner can leave it aboard a boat and it won't rust up.

At 15 feet, that 1 ounce of .410 buckshot load has expanded to 1½ inches in diameter. Each pellet is traveling as fast and delivering as much energy as a single pellet of 12 gauge buckshot. That single shot is a powerful and destructive shot at close range. It could mean the difference between life and death.

There is no such thing as an all-purpose firearm, but the Snake Charmer II comes closer to it than most. ●

Part I, Vaccine-Preventable:

IMMUNIZATION

*NOW is the time to get those shots
to control future infectious disease..*

By Jim Benson

(This is the first of a two-part series of articles dealing with vaccine-preventable communicable diseases. This article discusses the U.S. Government's recommendations on immunization, health risks associated with immunization, groups at high risk of acquiring certain diseases, and some of the major infectious illnesses and their vaccines. The second article, which will appear in next month's issue, covers the remaining major communicable disease threats today and the vaccines and other measures available to combat or prevent them).

MILLIONS OF people suffer and many die throughout the world each year, victims to a host of contagious diseases, a substantial number of which are preventable by immunization.

Widespread immunizations in the U.S. have largely eliminated some of the worst illnesses: poliomyelitis, for example. Other diseases, such as hepatitis, continue to pose a serious threat to public health.

A knowledge of what immunizations are available to prevent or lessen the severity of major infectious diseases that endanger the population, and certain groups within the population, will benefit survivalists.

Periodically the Centers for Disease Control (CDC) in Atlanta, Georgia, part of the U.S. Department of Health and Human Services, issues and updates the General Recommendations on Immunization. The recommendations are based on the latest

scientific knowledge of the substances used to induce immunity, known as *immunobiologics*, and judgements by public health officials and medical specialists.

Immunobiologics are vaccines, toxoids, and antibody-containing preparations from human or animal donors, including globulins and antitoxins.

Risks—There are health risks as well as benefits associated with all immunobiologics. The risks range from common, minor and inconvenient side effects to rare, severe and life-threatening conditions.

Recommendations on immunization practices balance scientific evidence of benefits, costs and risks to achieve the best levels of protection against infectious, or communicable, diseases.

The General Recommendations on Immunization are prepared by the CDC's Immunization Practices Advisory Committee (ACIP) and are intended only for use in the U.S., as epidemiological circumstances and vaccines may vary in other nations.

Age Factors—Several variables influence recommendations in regard to the age at which a given vaccine is administered. These include age-specific risks of disease, age-specific risks of complications, ability of individuals of a certain age to respond to vaccines, and potential interference with the immune response by maternal antibodies in infants.

In general, vaccines are recommended for the youngest age group at risk for a

specific disease with an acceptable level of antibody response following vaccine administration. For example, while infants as young as 6 months may be at risk for measles, most are protected by maternal antibody, which may inhibit successful immunization. In the U.S., measles vaccine is usually administered at 15 months of age, by which time the maternal antibody is no longer detectable.

Immunization policies in this country have been directed toward vaccinating infants, children and adolescents. Immunizations have not been routinely recommended for adults. The widespread and successful immunization of children has greatly reduced the occurrence of many vaccine-preventable diseases.

A significant portion of the remaining sickness and death from vaccine-preventable diseases now occurs in older adolescents and adults, according to the CDC. People who escaped natural infection or were not immunized with vaccines and toxoids against diphtheria, tetanus, measles, mumps, rubella and poliomyelitis may be at risk of these diseases and their complications.

To reduce the occurrence of these diseases still farther, the ACIP urges health care providers to offer immunizations to older adolescents and adults as a regular part of their practices.

High Risk Groups—Additionally, the epidemiology of other vaccine-preventable diseases, among them hepatitis B, rabies, influenza and pneumonia, indicates that people in certain age, occupational, environmental and lifestyle groups, people with special health problems, travelers and foreigners may be more susceptible than the general population to these diseases. Routine immunizations for these people are also recommended.

Included in these groups are hospital, laboratory and other health care personnel, morticians, staff and residents of institutions for the mentally retarded, veterinarians and animal handlers, homosexuals and illicit drug users, inmates of correctional facilities, alcoholics, foreign students, immigrants, refugees, people receiving hemodialysis treatment, and diabetics.

In the future crisis situation, there may be no physicians or other medical personnel available to treat disease. Survivalists and survival groups will exist for extended periods of time out of doors, or in cramped shelters. For these reasons, they will be at high risk of becoming infected with common communicable diseases, as well as less common illnesses, such as rabies or pneumonia. It is essential that those who intend to survive be immunized against these diseases *NOW*, and thus maintain high levels of immunity. The proper program is for individual survivalists and/or members of survival groups to undergo all currently available vaccinations, and to receive booster shots with prescribed regularity. Shot cards can

RECOMMENDED IMMUNIZATION SCHEDULE: INFANTS AND CHILDREN

Recommended Age	Vaccines	Comments
2 months	DTP-1* OPV-1**	Can be given earlier in areas of high incidence.
4 months	DTP-2 OPV-2	6 weeks to 2 months interval desirable between OPV doses to avoid interference.
6 months	DTP-3	An additional dose of OPV optional in areas with high risk of polio exposure.
15 months	MMR***	
18 months	DTP-4 OPV-3	Completion of primary series.
4-6 years	DTP-5 OPV-4	Preferably at or before school entry.
14-16 years	Td****	Repeat every 10 years throughout life.

* Diphtheria and tetanus toxoids and pertussis vaccine.

** Oral, attenuated poliovirus vaccine contains poliovirus types 1, 2, 3.

*** Live measles, mumps and rubella viruses combined in a vaccine.

**** Adult tetanus toxoid and diphtheria toxoid in combination.

provide an immediate record of which immunizations require boosters at what time. Serious survivalists should discuss immunization with their physicians, arrange to be vaccinated, and establish a routine for booster updating.

Vaccine Variables—Important variables can influence the effectiveness of immunobiologics. These include the quality of the vaccines or vaccine components, illnesses occurring at or near the time of immunization, and pregnancy.

The risks of a given immunobiologic and the variables which may alter its effectiveness should be discussed with a physician before administration of the immunobiologic. More information about risks and variables associated with immunobiologics can be obtained from your family doctor, state and local health agencies, large hospitals and medical schools, or the CDC. Such information from the CDC, intended mainly for health practitioners, is available by writing to the Division of Immunization, Centers for Disease Control, Atlanta, GA 30333.

Immunization Record—The ACIP recommends the use of standard immunization records by all health care providers so that each patient's immunization history can be obtained readily. Official personal immunization record cards have been adopted by every state and the District of Columbia to encourage uniformity of records and facilitate assessment of immunization status.

DTP—Simultaneous immunization against diphtheria, tetanus and pertussis (DTP) during infancy and childhood has been a routine practice in the U.S. since the late 1940s. It has played a major role in reduction of the incidence of cases and deaths from each of these diseases.

Only 11 cases of diphtheria were reported for the latest two-year period for which statistics on this illness are available. An acute infection, often of the respiratory tract, diphtheria produces toxins that can lead to inflammation of the heart and nerves. Complete and appropriately timed immunization is at least 95 percent effective in preventing this disease.

The occurrence of tetanus has decreased dramatically, largely because of widespread use of tetanus toxoid. Tetanus, or "lockjaw" as it is sometimes called, results from bacterial contamination of wounds, and is characterized by extreme body stiffness, involuntarily clenched teeth, muscle spasms and convulsions. The number of cases reported in recent years has remained relatively constant at about 100 per year. Tetanus occurs almost exclusively in unimmunized or inadequately immunized individuals. Immune pregnant women confer temporary protection against tetanus to their infants through transplacental maternal antibody.

In recent years, persons 20 years of age and older accounted for 90 percent of the

reported tetanus cases for which ages were known. In 10 to 20 percent of recent tetanus cases, no wound could be implicated. In 5 to 10 percent, only minor acute wounds or chronic skin lesions, such as skin ulcers, were reported. Neonatal tetanus occurs in infants whose mothers are not adequately immunized.

Tetanus toxoid is highly effective and generally induces protective levels of serum antitoxin which persist for at least 10 years after full immunization. Proper immunization is nearly 100 percent effective in preventing tetanus.

Pertussis, or whooping cough, is mainly a disease of infants and young children, so boosters are usually not given after school entrance at age 5 or 6 years. Pertussis is a highly infectious inflammation of the air passages noted by explosive coughing. Even with adequate immunization, it is possible for a child to contract pertussis. In these instances, the disease is often less severe and the risk of secondary complications, such as convulsions and encephalitis, is reduced.

The pertussis component of the combined diphtheria-tetanus-pertussis (DTP) vaccine must be omitted when the child has a history of convulsions. In this situation, immunization is given using combined diphtheria and tetanus vaccines.

Spread of pertussis can be limited by decreasing infectivity of the case and by protecting close contacts of that case. To shorten the period of infectivity, it is recommended that patients hospitalized with whooping cough take the antibiotic drug erythromycin.

Reactions, generally redness of the skin and hardening of tissues near the injection site for DTP vaccine, are common, but usually require no medical treatment and clear up quickly, although abscess at the injection site occurs in about 6 to 10 doses per million administered, and mild to moderate fever occurs in about 50 percent of infants who are inoculated. The fever may endure for up to two days and be accompanied by vomiting, irritability and malaise. Collapse or shock-like state, persistent screaming episodes, high fever and other more severe reactions, including Sudden Infant Death Syndrome, have been reported rarely after administration of DTP. A personal history of prior convulsions should be evaluated by a physician before immunization with DTP.

Measles—An acute infectious and often severe viral disease, measles or

rubeola is characterized by fever and a skin rash. It is frequently complicated by middle-ear infection or bronchopneumonia. Encephalitis occurs in approximately 1 of every 2,000 reported cases; survivors often have permanent brain damage and mental retardation. Death, predominantly from respiratory and neurologic causes, occurs in 1 of every 3,000 reported measles cases. The risk of death is greater for infants and adults than for children and adolescents.

Measles illness during pregnancy increases fetal risk. Commonly, this involves premature labor and moderately increased rates of spontaneous abortion and of low-birth-weight infants. Measles during the first trimester of pregnancy may also be associated with birth defects.

Before measles vaccine was available, more than 400,000 measles cases were reported annually in the U.S. Since the licensing of vaccine in 1963 there has been a 99 percent reduction in reported incidence of the disease.

In the latest year for which statistics are available, only 5.6 percent of the 3,139 counties in the U.S. reported cases of measles. Indigenous transmission of the disease has been eliminated from most areas of the country, but importations of measles still account for more than 100 cases annually.

Measles vaccine produces a mild or inapparent, noncommunicable infection. A single shot of the vaccine provides protection against measles in about 95 percent of the recipients, extending probably for their lifetime. Measles vaccine is suggested for all people born in 1957 or later who lack documentation of immunization or physician-diagnosed measles. People born before 1957 can generally be considered immune because measles was a universal infection before the vaccine became available.

About 5 to 15 percent of measles vaccinees may develop a temperature of 103 degrees F or higher, generally beginning between 5 and 12 days after vaccination. The fever usually lasts 1-2 days and, rarely, up to 5 days. Short-duration rashes have been reported in about 5 percent of vaccinees. Measles vaccine should not be given to persons with high-fever illnesses, pregnant women, persons with immune-deficiency diseases such as cancer, those being treated with corticosteroids, alkylating drugs, anti-metabolites or radiation, or who may be allergic to the vaccine.

RECOMMENDED IMMUNIZATIONS: ADULTS

Age Group	Vaccine or Toxoid					
	Tetanus Diphtheria	Measles	Mumps	Rubella	Influenza	Pneumococcal Disease
18-24 years	X	X	X	X		
25-64 years	X	X	X	X		
65 and older	X				X	X

IMMUNIZATION

Mumps—The occurrence of reported mumps cases has decreased steadily since introduction of live-mumps-virus vaccine. In the latest statistical year, a record low of 3,297 cases were reported, a 98 percent decline from the 185,691 cases reported in 1967, the year the vaccine was licensed. Mumps is characterized by a painful swelling of the salivary glands. Meningitis symptoms and inflammation of the testes may appear in males teen-aged and older who contract the disease. Deafness occurs at a rate of 1 case per 15,000 cases of mumps. Most people are infected with mumps by age 20.

A single dose of mumps vaccine provides protective and long-lasting levels of antibody in more than 90 percent of recipients. Measles-Mumps-Rubella (MMR) vaccine is preferred, if recipients are likely to be susceptible to measles and rubella, as well as mumps.

Mumps vaccine is indicated for all adults, particularly males, believed to be susceptible. Most adults are likely to have been infected naturally, and can, generally be considered immune, even though they have not experienced clinically recognizable mumps disease.

Inflammation of the salivary glands after vaccination has been reported occasionally. Allergic reactions including rash, itching and some bleeding in skin, mucous membranes and elsewhere, have been associated with mumps vaccination, but are uncommon, usually mild and brief. The vaccine should be given two weeks before or deferred for three months after a person has received immune globulin, whole blood or other blood products containing antibody. The same restrictions that apply to administration of measles vaccine apply to mumps vaccine.

Rubella—Preventing fetal infection and consequent congenital rubella syndrome (CRS), which manifests itself in a variety of severe birth defects, are the objectives of rubella, or German measles, immunization practices. The symptoms of rubella include fever and a pale pink

rash. Before rubella vaccines became available in 1969, most rubella cases occurred among school-aged children. Control of the illness in the U.S. was based on interrupting transmission. The primary target group for vaccine was children of both sexes. Secondary emphasis was placed on vaccinating other groups, especially women.

By 1977, vaccination of children 12 months of age and older had resulted in a marked decline in the reported rubella cases among children and had interrupted the characteristic 6- to 9-year rubella epidemic cycle. But this vaccination strategy has been less successful on rubella incidence among persons 15 years of age and older, who subsequently accounted for more than 70 percent of reported rubella patients with known ages. About 10 to 20 percent of this latter population continued to be susceptible.

Provisional data for the most recent year for available statistics, indicate a record low number of rubella cases—934 total—reported to the CDC. The reported confirmed number of CRS cases for this period was only four.

A single shot of live, attenuated rubella vaccine provides long-term, probably lifetime, immunity in approximately 95 percent of those who receive the vaccine. Rubella vaccine is recommended for adults, particularly females, unless proof of immunity is available or unless there is reason to believe harmful effects from the vaccine will occur.

The same precautions and prohibitions in regard to use of measles and mumps vaccines apply to rubella vaccine.

Up to 40 percent of susceptible adult vaccinees in large-scale field trials have experienced pain in body joints, usually of the small peripheral joints, such as fingers, wrists or toes, after vaccination; pain in other body parts and arthritis are reported less frequently. These symptoms generally occur 3 to 25 days after rubella vaccination and persist for 1 to 11 days. They recur rarely.

Poliomyelitis—Poliovirus vaccines, used widely since 1955, have reduced the

incidence of poliomyelitis dramatically in the U.S. The disease is characterized by upper respiratory or gastrointestinal symptoms which can progress to involve the central nervous system, sometimes leading to permanent paralysis. The annual number of reported cases of this illness declined from more than 18,000 in 1954 to an average of less than 13 per year in the period from 1973 to 1980.

In the U.S. today the risk of poliomyelitis is generally very small but epidemics are likely to occur, should the immunity of the population not be maintained by immunization of children, beginning in the first year of life. Small outbreaks have occurred in 1970, 1972 and 1979 as a result of introduction of the virus into susceptible populations in communities with low immunization levels.

Two types of poliovirus vaccine are licensed in the U.S.: oral polio vaccine (OPV) and inactivated polio vaccine (IPV). A primary vaccination series with either vaccine produces immunity to all three types of poliovirus in more than 95 percent of recipients. The primary series of OPV consists of three doses: two doses given 6 to 8 weeks apart and the third dose given at least 6 weeks and usually 6 to 12 months after the second. The primary series for IPV is four doses: three doses given 4 to 8 weeks apart and a fourth dose given 6 to 12 months after the third.

Routine primary poliovirus vaccination of adults 18 years old or older residing in the U.S. is not necessary. Most adults are already immune and also have a very small risk of exposure to poliomyelitis in the United States. Immunization is recommended for certain adults who are at greater risk of exposure to naturally occurring polioviruses than the general population, including travelers to areas or countries where poliomyelitis is endemic or epidemic; for members of communities or specific populations with disease caused by naturally occurring polioviruses; for laboratory workers exposed to specimens which may contain polioviruses; and for health care workers who are in close contact with patients who may be excreting polioviruses.

No serious side effects of currently available IPV have been documented. However, some persons may be hypersensitive to small amounts of antibiotics in the vaccine. In rare cases, OPV has been associated with paralysis in healthy recipients and their contacts, about 1 case per 9 million doses distributed. There may be some danger of administering these vaccines to persons who are immunocompromised with other diseases, to persons taking certain drugs, or to women who are pregnant.

It is imperative that every serious survivalist insure that he and his family are properly immunized against these diseases and to maintain high levels of immunity by regular booster shots or doses of the immunobiologics available. ●

RECOMMENDED IMMUNIZATIONS: PERSONS 7 YEARS OF AGE AND OLDER

Timing	Vaccines	Comments
First Visit	Td-1* OPV-1** MMR***	OPV not routinely administered to those 18 years and older.
2 Months After First Visit	Td-2 OPV-2	
6-12 Months After Second Td, OPV	Td-3 OPV-3	OPV-3 may be given as soon as 6 weeks after OPV-2.
10 Years After Td-3	Td	Repeat every 10 years throughout lifetime.

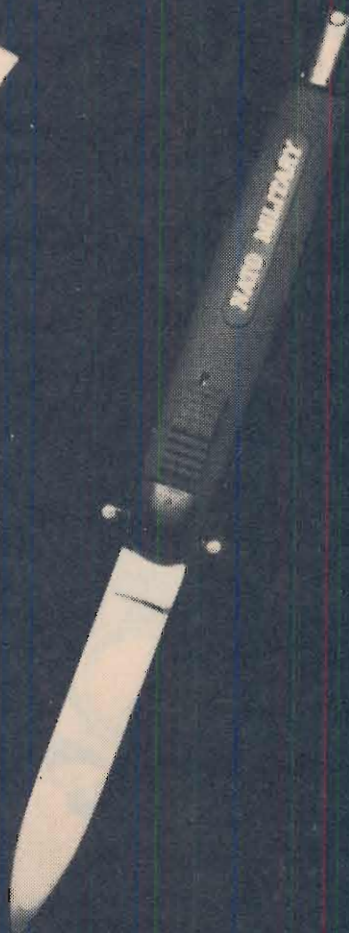
* Tetanus and diphtheria toxoids, adult type, are used after the 7th birthday.
 ** Oral, attenuated poliovirus vaccine contains poliovirus types 1, 2 and 3. When polio vaccine is given to individuals 18 years of age and older, inactivated polio vaccine (IPV) is preferred.
 *** Live measles, mumps and rubella viruses combined in a vaccine. Persons born before 1957 are considered immune to measles and mumps, but MMR vaccine can still be used.

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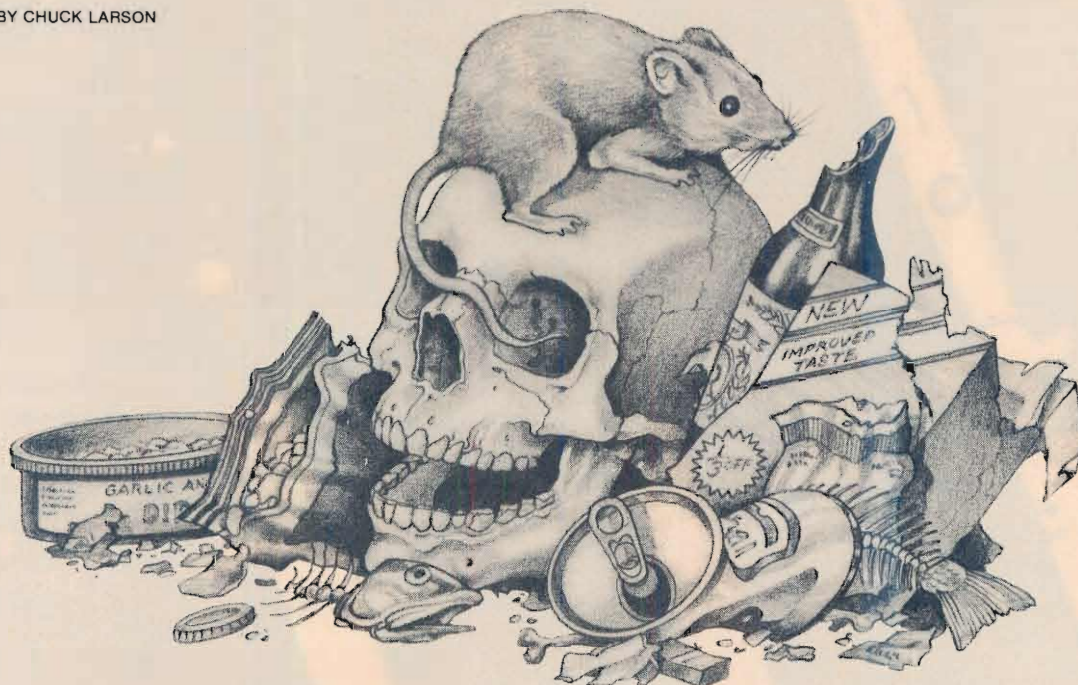
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The LAST SUPPER

Ben Mandrous was a junkman, oblivious to the rustlings in the darkness . . .

By Edward Brown

ILLUSTRATION BY CHUCK LARSON



THERE COULD BE no doubt that Ben Mandrous was a full-blown slob. His place was at the end of a dusty street on the edge of a town that young people left as soon as they could. The house was set farther back from the pavement than most, and the deep frontage of the property looked like an open air warehouse. Stored there were three or four tractor carcasses, a burnt-out generator, parts of automobiles, and a dozen rusting gas refrigerators Mandrous had made a good deal on a couple of years back, but somehow hadn't been able to sell.

Bilious yellow-green weed patches grew dwarf high among all this, with here and there bunches of Queen Anne lace showing startlingly white faces.

Long strings of briars anchored themselves in earth stained an array of colors from battery acids and chemicals.

The dwelling itself was cedar-sided, and someone long ago had painted it with a grey enamel, fecklessly dismissing any need for a primer. The grey was peeling off in long blisters, exposing the dark wood beneath and making for an interesting camouflage effect. Two front windows had been smashed by vandals, and soon after Ben had nailed metal "Red Man" chewing

tobacco signs over the casements. From the street it appeared as though a pair of Indians were doing sentry duty for Mandrous. The right set of risers of the steps had given way, resulting in a kind of ramp which sloped to one side rather than up. Anyone using the steps had to adopt the gait of a drunken sailor to enter the house.

Mandrous—The man who lived among all this wreckage looked as if he should have had flies buzzing over his head. There were deep sweat stains under Ben Mandrous' arms in all seasons, his gut overhung his belt by nearly a foot, and he had a pale potato face with cauliflower ears and piggish eyes which had an incredulous look to them.

Mandrous wore T-shirts which gradually changed color after a couple of weeks. As the weather changed, he'd add more T-shirts or peel them off. For special occasions Ben would get into a flowered vest he had ordered by mail from a cut-rate clothier in Tijuana, Mexico.

Ben Mandrous was a junkman, owner of a yard near the airport of the city across the river. He couldn't bear to throw anything away, always optimistically hoping he could turn whatever fell into his hands

into money; it didn't happen often. Mandrous would use his house as a temporary storage site until he could move an acquisition to the yard. Sometimes this took months; sometimes he forgot completely and whatever it was stayed. The house was a labyrinth of passages between great strands of cartons, crates, and broken-down machinery.

The littered front and the house were bad enough, but the backyard was the *piece de resistance*. Ben had a sagging deck out there, and on fair weather evenings he'd sit out back, watching the ballgame on a portable TV, working his way through bags and globs of cheese crunchies, popcorn, and potato chips, washing the whole mess down with beer after beer.

This would start right after supper, which Ben would pick up on his way home from the junkyard, stopping at the drive-in window of one or the other of the fast food shops along the way. He used to go inside, but once was told he was putting folks off their appetites, and was asked to leave.

So Mandrous would sit on his deck with the TV ballgame for company and munch. He figured he was entitled to a little snack: what the hell, he didn't have dessert.

The images on his tiny, squawking set flickered in blood red as the evenings deepened and the cool air stole over the deck like a noiseless thief from the greenwood in back of Ben's house.

The Forest—The woods came almost to the deck now, and were getting closer every year, with the strip of intervening browse shrinking, and the second and third growth trees maturing: scrub oak, pitch pine, and two or three varieties of gum. In the spring there were small snowfields of laurel scattered back there, with some struggling dogwood earlier, along with huckleberry, crowberry, and a profusion of ferns.

Ben saw none of this. The only time he even cast a glance at the forest was when he threw a chicken wing out there, a fish head, or an unwanted corner of a Big Mac, whatever. Mandrou, truth to tell, had not a trash or garbage can in the house: everything went out the back door and into the woods.

He'd done this ever since he'd bought the house, just before his wife finally gave up and vanished with the money Ben had kept hidden in a hole in the living room wall.

Just beyond the deck was a solid tapestry of pizza boxes, milk cartons, junk food wrappings, and rubbish of practically every sort. This soggy barrier rose to the lower branches of the trees, hanging there like frozen ghosts caught out after cock's crow. Occasionally an ill-wind would blow to scatter the top layer.

Rustlings—If Ben had cocked an ear to the forest over the din of his television, he might have heard a quiet rustling in the darkness. It was a sound which meant that the night creatures of the woods had arrived at Ben's, as they had for years now. They were there to rummage through the trash and nourish themselves on his leavings. There were hordes of them: rats with fierce red eyes in the front rank, mangy feral dogs, raccoons with the look of furtive bandits, and stone grey possums. Silent cats watched from the trees.

The animals observed an uneasy truce at Mandrou's place, but it was often broken. A tiny mouse licked up half an inch of milk puddled in a snack box before a perfidious cat leaped from a high place and pinned back to the ground. In a trice the cat was back on his branch, the head of the squeaking mouse dangling from his jaw. None of the other animals took any notice.

Change—So the even tenure of life at Ben's went on, days into weeks, weeks into months, months into years, until one night it all changed. Ben, tottering over to the beer, suddenly went through a rotted patch of deck. He found himself in up to his waist, and struggling only seemed to cause him slide in deeper. The half dozen quarts of Iron City he'd had as part of his post-prandial treat weren't helping him to

maneuver out either. At midnight, Mandrou gave up trying to extract himself, and fell asleep in the hole, his upper body hunched over to the deck planking.

But next morning, try though he would, Ben still couldn't get free of his solitary confinement. He struggled all day, cursing and yelling for help—to no avail. He was stuck, and by evening was half mad and frothing at the mouth.

Dusk faded into the blackness of night. Animals at the edge of the woods waited. There had been no breakfast scraps, nothing from lunch, no chicken bones, cartons with remnants of milkshakes exploding among the trees, nothing. More animals assembled, and the crowd began to grow impatient, particularly the rats, who were known to be the most peevish creatures of the forest.

The feral dogs snarled at the other animals, sizing up the weakest for a meal. Cats, keeping their own counsel, were inscrutable and unruffled in the safety of the trees. The remainder of the animals hung on the fringes, wondering.

Scores of eyes shone in the darkness, watching Ben's feeble efforts to extricate himself. The creatures stirred and fretted, getting hungrier and hungrier. One rat, the largest of the lot, looked at Mandrou's vast arms, quivering with mottled pink flesh like collapsed ham hocks. A half formed thought began to gestate in what passed for the rat's cerebral cortex . . . Maybe . . .

Messages—It's said by some that animals can perceive messages by means other than sound or look.

As the rat's thought bloomed, it passed to the other animals and ran through the pack like a bolt of electricity. As one, they started forward, the rats with their cruel red eyes in the van.

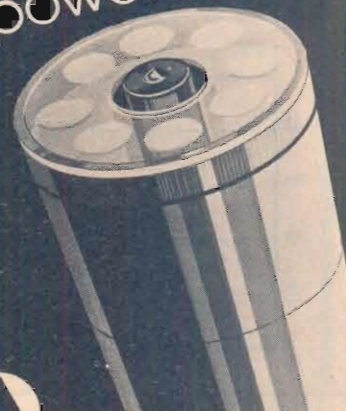
They were over the deck and at him, burying the junkman in a seething mass of matted hair, naked pointed tails, and sharp teeth. The sound of each animal beginning to make its distinctive feeding sound mingled with Ben's screams.

He bellowed and swung his great arms, but the weight of the animals was too much. All the beasts were anxious to get their share of the last supper at Ben's, and as the animals worked on Mandrou, the crush at first was so great there was feeding space only for the largest and most aggressive creatures.

They dined all night, one animal taking the place of another as the sated creatures slunk away. Next morning, when some of the neighbors showed up at Ben's house to see what accounted for his disappearance, they found his bones picked white. Not an edible scrap of Mandrou was left: fat, muscle, gristle, or insides.

As she gazed at the bones, one woman's first thought, which she quickly stifled, was that this was the first time she could remember that she'd ever seen Ben Mandrou completely clean. ●

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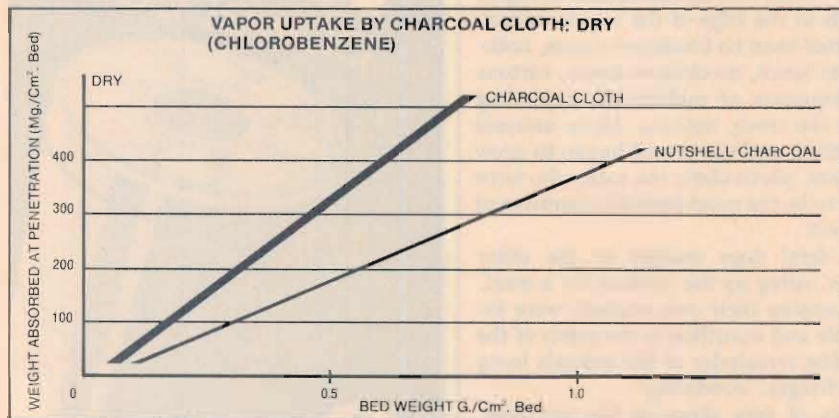
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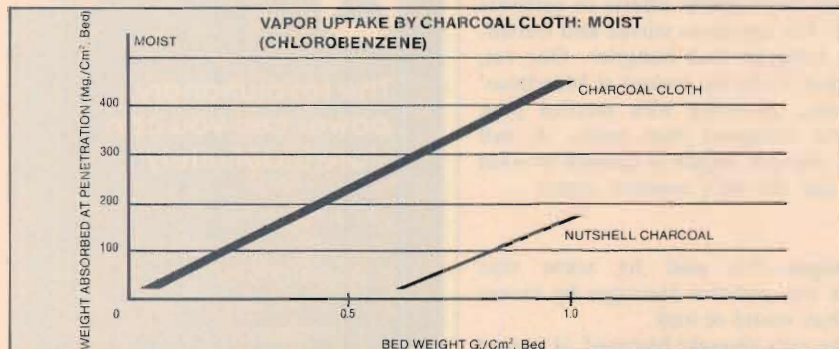
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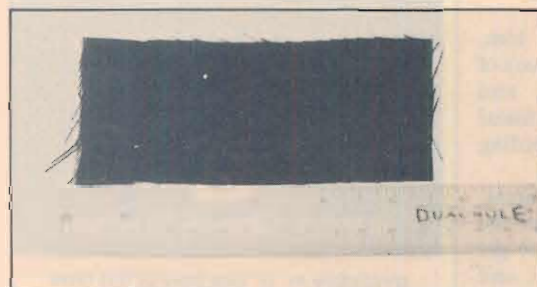


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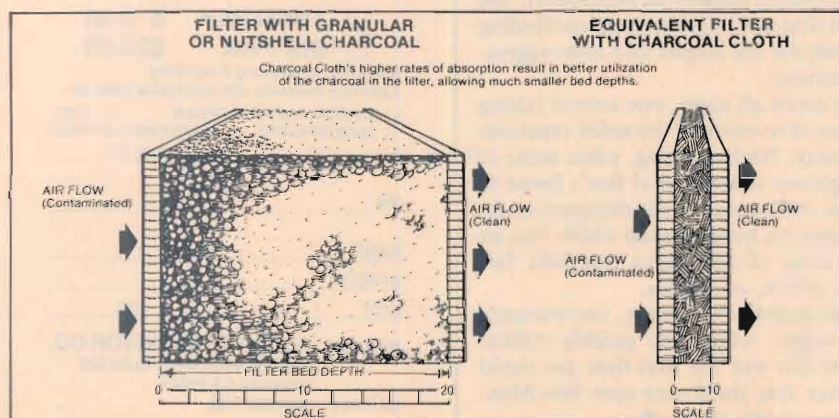


B

A & B—Vapor uptake by nutshell charcoal is at penetration some 3 to 5 percent by weight in comparison with 20 to 50 percent for Charcoal Cloth.



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It was developed by the British Ministry of Defense to be a new-generation, high efficiency filter material for protection against nerve agents and other highly toxic vapors found in chemical warfare.

A Charcoal Cloth NBC facelet mask has been developed by the Chemical Defense Establishment at Porton Down, UK, to provide military personnel with interim protection against surprise chemical attack, including nerve agents. It is scheduled to enter service with the British armed forces soon.

The considerable absorptive properties of Charcoal Cloth, combined with an ability to fix bacteria, are leading to new applications in medicine. It protects against anaesthetic gases and unpleasant odors, and aids in rapid healing when used in wound dressings.

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Unique—Charcoal Cloth is unique among charcoal absorbents in having a smooth external surface coupled with a very high absorptive capacity. Its rate of absorption for a wide range of gases and vapors are typically 5 to 20 times greater than for "nutshell" or granular charcoal.

The cloth also has lower air-flow resistance, low critical bed depths in filters, and lower degradation of performance in moist conditions than other charcoals, and it can be laminated to a variety of other fabrics without deterioration in performance, according to the manufacturer, Charcoal Cloth Limited.

Other military applications for the cloth are in respirator canisters, protective clothing and collective protection systems for tanks, ships, aircraft, submarines and shelters.

Industrial uses include air and water purifications systems, in air conditioning installations as a high-efficiency filter material, as a filter layer in disposable face masks or respirator canisters, as a high surface area support for precious metal catalysts, in the recovery of solvents by removal of contaminants, and in precious metals recovery in mineral extraction processes.

Inquires should be directed to Charcoal Cloth, Ltd., Park Court, 1A Park Street, Dept. ASG, Maidenhead, SL6 1 SN Berkshire, Great Britain. Telephone: Maidenhead (0628) 30341 •

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Please order in multiples of six. There are six No. 10 cans per case. You may mix a variety of different foods in a case, just order in multiples of six. A good example: 3 entrees, 1 fruit, 1 vegetable, 1 breakfast, (six items total). Take note that there are substantial savings when you buy in case lots. There are six No. 10 cans to a case. These savings add up!

FOOD in No. 10 Cans					
Tot. Qty.	Product Description	Aprx. Reconst. Serv. Per Can	PRICE		TOTAL
			CAN	CASE	
MAIN COURSE ENTREES					
	Beef Stew	18½ cup	22.90	123.00	
	Chicken Stew	21½ cup	21.60	116.50	
	Beef & Rice w/Onions	20½ cup	21.00	116.50	
	Spaghetti w/Meat See	19½ cup	15.50	83.00	
	Beef Stroganoff	16½ cup	12.90	69.50	
	Noodles & Chicken	16½ cup	15.59	83.50	
	Chili Mac w/Beet	20½ cup	16.45	88.50	
VEGETABLES					
	Green Peas	22½ cup	15.95	86.00	
	Corn	20 cup	15.95	86.00	
FRUITS					
	Apples	14½ cup	21.90	118.00	
	Strawberries	8½ cup	21.90	118.00	
	Peaches	12½ cup	21.90	118.00	
BREAKFAST COURSES					
	Cheese Omelette	24-2 eggs	33.75	190.00	
	Eggs w/Butter	27-2 eggs	25.50	137.00	
	Granola & Blueberries	22½ cup	27.45	148.00	
	Hash Brown Potatoes	28½ cup	10.50	59.00	
SNACKS AND CRACKERS					
	Milk Chocolate Lumps	45¼ cup	32.00	182.00	
	Crackers	Approx. 70	3.45	53.00	
	Butterscotch Pudding	91½ cup	15.00	85.00	
	Chocolate Pudding	80½ cup	15.00	85.00	
	Banana Cream Pud.	91½ cup	15.00	85.00	
	Cheddar Cheese Spnd.	5.8 lbs.	30.75	175.00	
BEVERAGES					
	Orange Drink	105-8 fl. oz.	13.75	78.00	
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BREAKFAST: 3 #10 cans Eggs w/butter
3 #10 cans Cheese Omelette
3 #10 cans Granola w/Blueberries
6 #10 cans Hashbrowns

FRUITS: 5 #10 cans Strawberries
5 #10 cans Apples
5 #10 cans Peaches

VEGETABLES: 5 #10 cans Corn
6 #10 cans Green Peas

MEATS: 6 #10 cans Beef Steak Portion
5 #10 cans Hamburger
6 #10 cans Pork Chops
5 #10 cans Sausage

DESSERTS: 1 #10 can Chocolate Pudding
1 #10 can Banana Cream Pudding
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KG-21	Long Grain Brown Rice - 41 lbs. Net.	30.00
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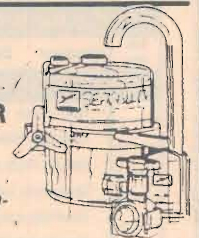
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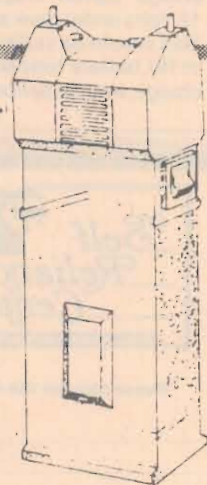
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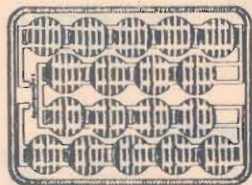
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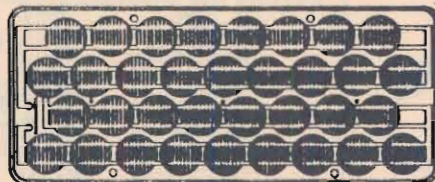


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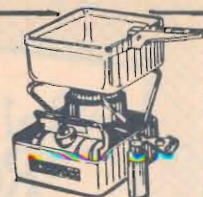
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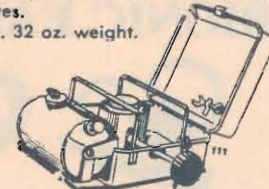
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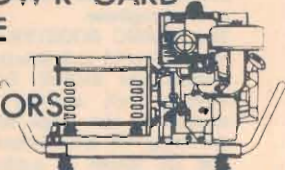
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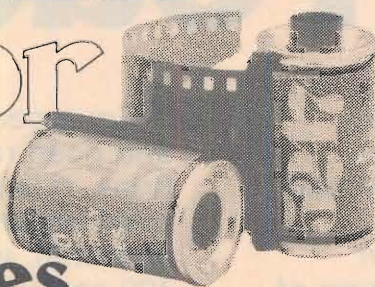
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Survival Communications:

HAM RADIO

Don't wait, learn and earn your license now, and practice this skill until the crisis . . .

By Thomas D. Cox

THE WORST HAPPENS. Overnight America's sophisticated, fragile public communication systems are turned into scrap metal, high-tech junk. What happens to you and your survival group? Sure, you've provided for as much as you can of your own medical care, and the group is well drilled in protecting itself in the absence of constituted authority—or the presence of unconstituted authority—but what about communications?

In previous issues of *American Survival Guide*, you may have read some measures you can take to fill the gaps, but there is still a great void. Where do you go to pick up the knowledge and skills necessary to put radio communications solidly in your corner when you really need it?

No single book, no one magazine article will get you there. Even Uncle Sam won't provide the background you need, because military training tends to be specialized and dependent on the availability of one particular type of gear. Once you leave the service, where can you hone and develop your skills? The answer is Amateur Radio.

The capital letters mean Amateur Radio is a government-sanctioned hobby that allows individuals in the U.S.—anyone who is not an agent of a foreign government, regardless of age, sex, national origin, or anything else—to acquire and develop radio communication skills through hands-on experience.

Radio Amateurs, or "hams," as they are popularly known, have been building, operating, and maintaining their own radio stations since the dawn of radio in the first decades of this century. Before World War I, before there was any government agency involved in regulating telecommunications—which then was known as "the radio art"—hams were pushing out the horizons of technology, always well ahead of government and industry's efforts to understand and use this new medium. And as government and industry have developed an appetite for new pieces of the electromagnetic spectrum, hams have fought as a group to have portions of that spectrum set aside for their continued use and experimentation.

Not only have hams been responsible for many of the quantum jumps in radio communications technology, but hams are proud of their ability to do more with less,

and to provide the means of contacting the outside world when all other means fail. And here is where you, the survivalist come in. High on your list for achieving survival should be becoming a Radio Amateur.

What's that you say? "Ham radio is for engineering types, people with plastic pencil holders in their pockets and little scientific calculators hanging from their belts." Nonsense! While a lot of hams are scientists and engineers—many of whom were influenced in their career choice by an early love affair with the radio hobby—most are not technicians by trade.

Tests—You don't need a hefty background in electronics to become a Radio Amateur. You must pass some tests, for which you will have to study. There are several study guides available to help you prepare for these tests and almost any community has an organization of hams who will be delighted to help you study. What is important to you about Amateur Radio is not what abilities you bring to the hobby, but what you acquire in the process of *being* a ham.

These tests should not be intimidating to someone who has committed himself to learning the inner functions of a semi-automatic pistol, or the proper first aid treatment for shock, for example. The difficulty and subject matter of the examinations depends on the level of license you are after. Each class of license allows certain increased privileges offering greater flexibility in the mode of operation and portion of the radio frequency spectrum you are allowed to use. Beginners are likely to acquire the Novice Class license, which gives its holder certain limited privileges upon passage of a test of his ability to send and receive Morse Code at low speed. There is also a written test of electronics fundamentals and basic FCC regulations. These tests have been passed by elementary school students! The highest license class is Extra, which grants all of the privileges available to Amateurs in the U.S. Of course, the tests required are much more difficult.

The Advanced class license privileges are significantly greater than those granted to the General class licensee, but not significantly less than those granted to an Extra class licensee.

The Federal Communications Commission (FCC) is the agency responsible for regulating Amateur Radio, and in accordance with international treaties, sets limits and standards for the operation of Amateur stations. In addition to policing the ham bands, the FCC also serves to protect the ham from incursion into his part of the radio spectrum by persons and organizations who have no right there. The FCC also defends hams against local laws and ordinances which might restrict their activities by venturing into the federal agency's domain as sole authority in this field.

Why bother to get a license? Of course, if somebody drops The Big One, there likely will not be any FCC to quibble over such details. You probably wouldn't need a license to practice medicine, either. But you wouldn't wait for your first appendectomy to start reading up on anatomy, would you? To get the most out of radio during a disaster, you need practice, the right equipment, and the ability to improvise. Give yourself credit for your abilities and earn legal access to the radio spectrum. You will have tangible proof of the accomplishment, a license, plus awareness of simple facts that will keep the feds away from your door. Who needs fines and jail terms?

The system of administering license examinations has undergone some major changes in recent months. In the past, an exam for any of the license classes above Novice had to be taken in front of an FCC examination team at a time and place convenient to the team. As a result of recent legislation, teams of volunteer hams are allowed to administer the exams themselves, thus making it possible to take the test in or near your home town, rather than having to travel to the nearest federal examination point.

Because of cutbacks in the FCC's funding, it is possible that some field offices may have been closed by publication time. The best way to get current information on where to apply to take an examination is to write to the home office: Federal Communications Commission, Amateur Radio Service, Gettysburg, PA 17325.

The range of activities available to the ham with a Technician class license or higher is almost endless, but not all may be



The author's hf station; the transceiver bottom left operates on ham bands between 3 and 30 mHz, on either code or voice. At the right is a high-quality hf receiver that tunes from 150 kHz to 30 mHz continuously.



The general coverage receiver can tune into ham bands, international shortwave, government, military, and shipping radio traffic. The small box atop the receiver is an "active antenna" which amplifies weak signals.



Here is the antenna tuner which makes the transceiver feed into a wide variety of antenna configurations with maximum efficiency.

of immediate interest to the survivalist. The elaborate, "big-bucks" station, with thousands of dollars worth of non-portable gear and extensive antennas may not be your best model to imitate. However, you can learn a lot from the guy who set this system up. More in your area of interest may be the local club's "Field Day" operation, or its Emergency Communications Committee.

Activities—Field Day is a group activity in which interested members of a club (or clubs) assemble a portable station which will operate in some remote area without making use of the public utilities for transport, communications, or power. Field Day activities are coordinated nationwide, so local clubs all over the country have the opportunity to test their readiness to replace short-range communications facilities, and to establish contact with hams throughout the U.S. Some clubs may invite the local Civil Defense unit to participate, and, in fact, many members may be CD volunteers as well. Field Day participants test their emergency power supplies and generating systems, and their ability to set up a working radio station to carry high-volume traffic under adverse conditions, all the while seeing to their own survival needs.

You don't need to make survival radio a group activity, however. If you are part of a survival team, you will certainly want to make radio part of your team's training activities. There is no reason why most or all of the team members cannot become Radio Amateurs. Group study for the tests might be more profitable for you than working on your own, and will help motivation and the sharing of abilities, as with the other activities of your group. But as an individual, you can work to prepare yourself to provide communications under adverse conditions by keeping your operating skills fresh and reconditioning used gear to serve as backup for the primary equipment.

Skills—Of the skills you will learn as a ham, few will pay off better than knowing the principles of efficient antenna design. Starting with the basic formulas, you will learn how to build a simple "dipole" antenna of the right dimensions to work at

the frequency you need, and how to place the antenna to best advantage. From the dipole, you will progress in complexity (and efficiency) through other designs that offer advantages in every situation.

Directional antennas are very useful tools for survival. Imagine a bare light bulb hanging from a wire in the ceiling of a room. The bulb casts about the same amount of light on all the walls, the ceiling, and floor of the room. This is a good illustration of the omnidirectional antenna. This type of antenna is best when you don't know where the other station is—as long as you don't mind your signal being available to anyone who happens to be listening within range.

Now, put a reflector like the one behind the bulb of a flashlight on one side of the bare bulb. The area behind the reflector is now in shadow. The light that was shining to the rear is now reflected forward, and the front wall is getting roughly twice as much light as it was, without increasing the brightness of the bulb and its power consumption. Now let's put a lens in front of the bulb that takes the light coming directly from the bulb, and the reflected light, and focuses it all on one small area of the wall. That spot is even more brightly lit, and the rest of the wall is left dark, as is the rest of the room. The brightness of the light on the target has been increased many times, by concentrating it where it is wanted, instead of squandering it in every direction. If you were an observer standing in the bright spot, you would have seen the light get brighter and brighter, although the amount of electricity needed to produce that light did not vary. Now you see that a directional antenna, which acts very much like the reflected and focused light bulb, has several advantages: It sends the signal where you point it; it keeps the signal away from stations you don't want to hear it; and it effectively multiplies the strength of the signal in the desired direction without requiring more power. And when you are receiving with a directional antenna, you are listening to the area you want to hear from, while ignoring jammers or other interference, and the signals from the target direction are stronger than they would be through an omnidirectional antenna.

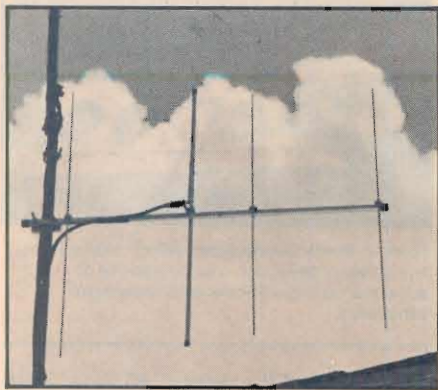
A common example of a directional

antenna is a TV antenna. All those aluminum rods ("elements") are helping to concentrate the desired signal and keep out signals from other directions. By the way, if you see a TV antenna which has been discarded, take it home. The tubing used in most TV antennas is great raw material for directional and omnidirectional VHF and UHF antennas. If you have limited storage space, you can drill out the rivets and remove the other hardware with screwdrivers and pliers, and store the individual elements in a long, skinny bundle. Bent elements may sometimes be straightened enough to be used as is, or may be cut up for use as smaller elements. Designs for hundreds of homemade antennas can be found in several of the books listed with this article.

A dipole is the fundamental component of most directional antennas, so take a look at some representative samples that can be produced with the formula: $(468/f \text{ (mHz)}) = L \text{ (feet)}$. In other words, the length of a dipole, in feet, is equal to 468 divided by the frequency, in megahertz, at which the dipole is to be used. Grab your calculator and try a dipole for the middle of the AM broadcast band: $468/1 \text{ mHz} = 468 \text{ feet}$. That's a fairly long piece of wire! That's one reason your AM car radio doesn't use a dipole. For contrast, try out a dipole for the "2-meter" ham band, $468/146 \text{ mHz} = 3.205 \text{ feet}$. You can see a general rule at work: the higher the frequency, the shorter the antenna.

Costs—Does getting into ham radio cost a lot of money? Does it take lots of space? Both questions can be answered with an unqualified, "It depends." It depends on how elaborate a station you wish, what modes and frequencies you want to be able to use, and how many "bells and whistles" you're after. It's possible to spend upwards of \$10,000, and still be pawing through the catalogs, looking for more. It's also possible to have an operating station for less than \$100. Do you want to talk to stations in other parts of the country, or around the world? Then you'll need equipment that operates in the high-frequency (hf) part of the radio spectrum. Signals at these frequencies may, under the right conditions, bounce back and forth between the Earth's surface and upper atmosphere until they ▶

HAM RADIO



This is a directional antenna for a 2-meter radio signal. The horizontal pipe—boom—is about 4 feet long.



This portable transceiver, placed in its charger/power supply and joined to an outside antenna, and with a hand microphone, becomes a base station.

have traveled thousands of miles. However, hf signals can't be counted on to be heard a few miles away. They may be on the peak of one of those bounces, traveling hundreds of miles above the other station's antenna. An example of some "middle of the road" hf equipment is the author's hf station. The transceiver—combination transmitter and receiver—is about 10 years old, bought used from another ham who was "buying up." It's a Kenwood TS520, capable of Morse code or single-sideband voice transmissions at about 90 watts in several segments of the hf ham bands. Shown in the accompanying photo, the small white box with a meter in the middle, atop of the center box, is an antenna tuner, a very handy accessory with hf equipment. More about that later. The antennas used are all homemade from scrap wire and salvaged joints of pipe or used TV antenna masts. Total cost of this station, not counting the extra hf receiver, was about \$450.

The antenna tuner is an indispensable accessory to the hf station, especially when the need can exist to use whatever piece of metal is available as an antenna. "Antenna tuner" is really a misnomer. This device doesn't really "tune" the antenna; rather it modifies an important characteristic of the antenna circuit. This change makes the antenna more compatible with the transceiver. Any antenna, whether it is commercially made, or simply a random piece of wire, has an inherent feature called "characteristic impedance."

Impedance is to an alternating current, such as that produced by a radio signal, what resistance is to a direct current. Impedance, however, is the complex product of several factors which interact in an antenna to produce an impedance of a specific value. Change any of these factors and the impedance likewise changes.

Most modern ham transceivers are built to operate into an impedance of 50 to 52 ohms. If the antenna used does not have an impedance within this range, some efficiency will be sacrificed, and if the

difference is great enough, the equipment may shut down or be damaged. The tuner changes some of the factors so that antennas with characteristic impedances varying over a wide range may be used with any transceiver over widely differing frequencies. Because emergency antennas may be improvised and need to work over several frequencies, a tuner is a vital part of any emergency station. By the way, an antenna tuner is a passive device: it doesn't require any external power to operate. The one in the photo is very small and light, and pays its own way.

VHF/UHF—If, on the other hand, you want a reliable radio "circuit" over a distance of less than 100 miles, the VHF or UHF bands are where you need to be. This equipment has the advantage of coming in smaller packages, such as the VHF mobile (by KDK) and hand-held (Yaesu FT208R) rigs, also pictured. The mobile rig was bought used for \$100. The hand-held, bought new, was a little over \$400 with several accessories. The station photograph shows the hand-held sitting in one of those accessories: a power supply that charges the internal batteries while allowing the unit to be used as a "base" with outside antennas, also pictured. Thus the author has a combination of short-haul and long-haul capabilities in one place, a very handy setup. The only thing lacking from the author's station is emergency power for the hf equipment. However, the transceiver will operate from a source of 12 volts DC, such as a vehicle electrical system, so a battery can be brought in, or the vehicle may be parked in the yard and power cables fed in through the window. It's not very tidy, but it will work. Photovoltaic panels and storage batteries are in this station's future.

Where do prospective Radio Amateurs shop for ham gear? Well, forget Radio Shack. That electronics chain hasn't sold amateur equipment for a long time, being more interested in the broad consumer market. For new gear, listed elsewhere

with this article, there are major mail order suppliers of transceivers and accessories. If you live in or near a large city, there may be a ham gear dealer you can visit. The author lives in the boondocks, and the nearest store selling ham gear is about a day's drive away. It's worth a drive if you have the time, to establish a good relationship with a dealer. Get to know his warranty policy and reputation. If he or his sales help act as if they don't have time to talk with you, go elsewhere. They don't need your business, either.

Hamfests—For a slightly more adventurous soul, "hamfests" are a good place to shop. Hamfests are gatherings of area hams, usually sponsored by one or more local radio clubs, where used and sometimes new equipment can be purchased at reasonable prices. The larger hamfests are held in the summer, except in some southern states. If you are new to the hobby and don't have an electronics background, arrange to meet a friend there who knows used gear, and ideally, knows the seller. Crooked types are not common at hamfests, but just as in any other flea-market situation, "Let the buyer beware!" At the larger hamfests, manufacturers' representatives may offer new equipment at prices well below list, so look for the brand names at the display booths.

If you live near a large military installation, you should get on the Defense Department's mailing list for notices of surplus property auctions. Hundreds of thousands of dollars worth of Uncle Sam's finest junk gets auctioned-off regularly at several places around the country. As long as you're not connected with the Defense Surplus Property Disposal Service, you are eligible to bid at one of the auctions. Write to the DSPDS for details. The address is at the end of this article. By the way, the same caution applies here as at the hamfest fleamarkets. Be careful!

Books—Your survival library ought to include some radio reference books along with the ones on orienteering and first aid. Some titles are suggested in the recommended reading list. Note that some of those listed are intended to help you win your license, and others should be around for quick reference when you're setting up and operating your station. A good introduction to the ham literature is yours for a little more than a song, if you go to your bookstore's magazine rack and pick out one of the ham magazines. The author recommends *CQ*, the address of which is in the reading list, as the magazine to pick up for the newcomer to the hobby, as this journal is quite readable. All but a few of the magazines direct at least some of their articles at the beginner.

If there is a "bible" for amateur radio, than it is *The Radio Amateur's Handbook*, edited by the American Radio Relay League. In one book you can find all the basic information necessary to the opera-

tion of a ham station, from the fundamentals of electricity through practical antenna and equipment construction projects. If you have only one radio book on the shelf, this should be it.

Several times this article has recommended contacting a local radio club. So, how do you find a local radio club? Except in large cities, they won't be listed in the Yellow Pages. Start with a call to the Chamber of Commerce. They usually keep a list of non-profit organizations. Also, check the organization news and meeting schedule section of the local paper. If these tactics all fail you, write or call the American Radio Relay League, 225 Main St., Newington, CT 06111, and ask for a list of clubs near you. The ARRL is a non-profit organization, so a self-addressed, stamped envelope will be appreciated.

This article is intended to get you started in Amateur Radio, and to help you understand why being a ham is of value. If you take survival seriously, you owe it to yourself to join with the radio communications hobby for training and experience you can't get anywhere else.

The names and addresses presented herewith below are intended to help you start in the right direction, whether you're shopping or just looking for more information. ●

ADDITIONAL INFORMATION

AMATEUR RADIO BOOKS

AMERICAN RADIO RELAY LEAGUE*
225 Main St.
Newington, CT 06111

BASH EDUCATIONAL SERVICE*
P.O. Box 2115
San Leandro, CA 94577
(415) 278-8275

HAM RADIO'S BOOKSTORE
Greenville, NH 03048
(603) 878-1441

WAYNE GREEN'S BOOKS
Retail Sales
Peterborough, NH 03458

HOWARD SAMS & CO.
Indianapolis, IN 46268

*These companies publish manuals to help you pass the license exams.

RECOMMENDED READING

THE RADIO AMATEUR'S HANDBOOK
American Radio Relay League

THE ANTENNA BOOK
American Radio Relay League

RADIO HANDBOOK
Howard W. Sams & Co.

73 DIPOLES AND LONG-WIRE ANTENNAS
Howard W. Sams & Co.

THE FCC RULE BOOK
American Radio Relay League

WORLD RADIO TV HANDBOOK
Billboard Publications
One Astor Plaza
New York, NY 10036

HAM MAGAZINES

CQ, THE AMATEUR' JOURNAL
78 N. Broadway
Hicksville, NY 11801

HAM RADIO MAGAZINE
Greenville, NH 03048-0498

73, AMATEUR RADIO'S TECHNICAL JOURNAL
Subscription Dept.
P.O. Box 931
Farmingdale, NY 11737

QST
American Radio Relay League
225 Main St.
Newington, CT 06111

MANUFACTURERS— TRANSCEIVERS

ICOM AMERICA
3331 Towerwood Dr., Suite 307
Dallas, TX 75234
(214) 620-2780
and
2112—116th Ave., N.E.
Bellevue, WA 98004
(206) 454-8155

TRIO-KENWOOD COMMUNICATIONS
1111 West Walnut St.
Compton, CA 90220

TEN-TEC, INC.
Sevierville, TN 37862

YAESU ELECTRONICS CORP.
6851 Walthall Way
Paramount, CA 90723
(213) 633-4007

TRANSCEIVER KITS

HEATH CO.
Benton Harbor, MI 49022

RADIOKIT
P.O. Box 411
Greenville, NH 03048
(603) 878-1033

MANUFACTURERS— ANTENNAS & ACCESSORIES

ALUMA TOWERS, INC.
P.O. Box 2806
Vero Beach, FL 32960
(305) 567-3423

BUTTERNUT ELECTRONICS CO.
405 E. Market St.
Lockhart, TX 78644

KLM ELECTRONICS, INC.
P.O. Box 816
Morgan Hill, CA 95037

TELEX HY-GAIN
9600 Aldrich Ave. So.
Minneapolis, MN 55420

TELREX LABORATORIES
P.O. Box 879
Asbury Park, NJ 07712

MAIL ORDER DISTRIBUTORS

AMATEUR ELECTRONICS SUPPLY
4828 W. Fond du Lac Ave.
Milwaukee, WI 53216
(414) 442-4200

C-COMM
6115 15th Ave., N.W.
Seattle, WA 98107
(206) 784-7337

Continued on page 63

CLASS LICENSE	WORDS/MINUTE, CODE TEST	WRITTEN TEST	PRIVILEGES
Novice	5	Fundamentals of electronics and FCC regulations.	Morse Code only on 3700-3750 kHz, 7100-7150 kHz, 21.1-21.2 MHz, and 28.1-28.2 MHz.
Technician	5	Above, plus general level electronics and regulations.	As above, plus all U.S. Amateur privileges on frequencies above 50 MHz.
General	13	Same as above.	As above, plus all U.S. Amateur privileges not reserved for higher license classes.
Advanced	13	Above, plus intermediate level electronics.	All Amateur privileges not reserved for Extra Class Amateurs.
Extra	20	Above, plus advanced electronics and techniques.	All U.S. Amateur privileges.

Note: Holders of a valid license who wish to qualify for a higher class of license are not required to retake the test elements they have already passed. For example: A Technician need only pass the 13 words per minute code test to earn the General Class license; and thereafter, only the intermediate electronics test to qualify for an Advanced Class license. Also, anyone may take any number of levels of tests, with or without a lower class of license. If someone "off the street" with no valid license is able to pass Technician through Extra Class tests in one sitting, that person will walk out of the examination with Extra Class privileges.

Daily Requirement:

AVITAMINOSIS

Deficiencies can cause physical and mental damage...

By Dexter W. Knight

AVITAMINOSIS TRANSLATES as a state of being without vitamins—vitamin deficient. In normal times, vitamin deficiencies of any kind are seen rarely, hence most medical practitioners are unfamiliar with their effects. Health care personnel unfamiliarity won't affect most people, if for no other reason than that when "stumped," the family doctor will admit the patient to the nearest hospital for diagnostic testing to determine what the problem is, its cause, and how to correct it.

In non-normal times, it will be up to the individual survivalist to recognize the signs of vitamin deficiencies that may present themselves, and to insure that no one in group or family becomes vitamin deficient. To familiarize readers with vitamin requirements and vitamin deficiencies, each vitamin and a few minerals will be presented and discussed separately. But first, here's a look at examples of possible avitaminosis from history and popular fiction.

The Wars—The scene is an isolated trench somewhere in France during World War I. The soldiers have existed on hard french bread, wine and sausages for more than a week. Days and nights are filled with battle stress and isolation. By the eighth day, the men are restless and irritable. They snap at imagined offenses. Few can sleep. Several fire their rifles at nothing, revealing their position to enemy snipers. All are killed or wounded as a result.

World War II brings death marches in which many prisoners sicken and die as a result of being forced to travel on foot for long distances with very little food.

During the Korean conflict, prisoners of war confined in camps die as a result of dysentery-induced dehydration. Others become irrational and die at the hands of their captors. In the Vietnam War, long-range recon patrols, special-mission teams, and "out-of-town" Green Beret units earn a reputation for being crazy, and are credited with acts that no normal man would do.

After the next war, in an uncertain future, a family eats food stored for decades, perhaps centuries with no ill effects and leads a normal life on vegetables grown in gardens.

Of these war stories, only the last is fiction. Yet some people believe that they will be able to live off of stored foods after the passage of long periods of time.

How Vitamins Work—Understanding how some vitamins work, and why they are required involves understanding how much food the average person needs. The number of calories required by a man *at rest* can be calculated with the "Harris-Benedict formula for resting-state basal metabolism rate" as follows:

For men it's $66.4 + 13.7W + 5H - 6.7A$ = Number of calories. In this formula, A is the age in years, W is body weight in kilograms, and H is height in centimeters. For example, a 35-year-old man who is 5 feet, 10 inches tall, and weighs 160 pounds requires about 1,000 per day—while lying in bed! The more work a human does, the more calories are required. Moreover, the number of calories required increases in relationship to physical problems, as follows:

- Surgical procedures raise the needed amount by 10 to 20 percent.
- Trauma raises the needed amount by 20 to 30 percent.
- Infection raises the amount by 30 to 60 percent.
- Burns raise the amount by 50 to 110 percent.
- Uncomplicated starvation *decreases* the required number of calories by about 10 percent.

Other factors, such as physical condition, overweight, underweight, race, and medical history, alter needs for calories and vitamins. Because people are so different, this article will be general in content. Bearing this in mind, here's a look at individual vitamins.

Vitamin A—This is a relatively stable compound when exposed to heat and oxygen, but the presence of oxidizing agents may destroy it in food. Vitamin A is an absolute necessity for formation of retinene, which is needed for vision. It is equally necessary for stimulation of new cell growth and, as such aids in healing wounds. Presence of Vitamin A increases human lifespan, and delays senility.

People who are deficient in Vitamin A experience eye problems, including night blindness, permanent eye damage up to total blindness and, in about 50 percent of long-term deficiencies, *death*. Frequently children exhibit far more complex symptoms such as photophobia, the aversion to sunlight, and loss of color vision. Additionally, children and some adults ex-

perience "toad skin," when the epidermis becomes dry and rough, nausea and other digestive problems, breathing troubles, decreased urine secretion (as low as 100cc per day), thin or defective tooth enamel, impaired bone end and edge formation, liver problems, retarded growth, tendency toward infection, mental retardation, increased cranial pressure, and finally, urine containing blood and/or pus. Vitamin A is somewhat dependant on the presence of Vitamin E, and a deficiency of E may cause the patient to become deficient in Vitamin A as well. The U.S. recommends a daily allowance (USRDA) of 5,000 USP units, or about 1.5 milligrams. For example, 3.5 ounces of beef liver contains about four times the USRDA of Vitamin A.

Vitamin A is present in about all solid foods, except refined grains and sugars, chestnuts, coconuts, beef organs other than liver, pork other than liver, and codfish other than liver.

In fact, Vitamin A is so abundant that overdoses are much more common than deficiencies. A defective diet, lasting for 4 to 6 months, usually is necessary before symptoms of an A deficiency become apparent. Toxic levels are about 20 times the USRDA for several days in adults, and intake of 10 times the USRDA for long periods will have a like effect. Excessive Vitamin A causes bones to become fragile, the liver and spleen to enlarge, drying and peeling of skin, falling hair, itching over the entire body, headache and nausea, and, in women, menstrual irregularities. In infants and children, an intake of 60 times the USRDA in a *single day* is toxic, and may be lethal.

Exposure to cold weather increases the need for Vitamin A in everyone, but trauma has no major effect on the amount required by the body.

Vitamin A is stored in the liver, thus anything that damages the liver will interfere with availability and the body's use of it.

Vitamin D—This vitamin is stable exposed to heat, but is somewhat sensitive to light, even though it is synthesized by normal skin in the presence of ultraviolet light. Because of this synthesis caused by sunlight, Vitamin D deficiency is relatively rare, except in parts of the world where winters are long, or other conditions prevent exposure of human skin to sunlight—fog, smog, volcanic dust, or where there is no intake because of dietary problems.

Vitamin D is essential to bone and tooth formation, and continued strength of both. Deficiency causes rickets in children, and softening of bones in adults, practically the same disease. Rickets affects all developing bones in children, producing bowed legs, curved spinal column, lumps on the ribs, and oddly shaped skulls—often square seeming. In adults whose bones are mature, the effect is to soften longer bones and allow them to

bend, without most of the other effects of rickets. The pelvis and ribcage will deform somewhat, and may result in strange body configuration. Tetany—muscle spasms and twitching—may develop in either children or adults. Muscle tone will degenerate, in particular those of the lower abdomen which will produce a characteristic “pot belly.” Children will experience late development, and early decay of their teeth. It takes several months without Vitamin D for the onset of rickets.

While the USRDA for Vitamin D is low—only 12 *micrograms*—it is not very easily found in nature. Fish, liver and egg yolks are the prime sources. As an example, 3½ ounces of raw beef liver has about 1 microgram present, while the same weight of salmon has about 7½ micrograms present. An extremely high amount of Vitamin D is present in wild bees, which some foraging books recommend as a food source. It is reported that 3½ ounces of wild bees contain 180,000 micrograms of Vitamin D—about 15,000 times the USRDA! Toxic effects begin when the intake of Vitamin D exceeds about 60 micrograms per kilogram of body weight. In other words someone who ate one serving of 3½ ounces of wild bees would have to have a body weight of around 7,000 *pounds* in order to be unaffected by that dose!

Less dangerous, but still unpleasant, effects can be caused by taking as little as 120 micrograms per day for one to three months. These effects include the symptoms of excess calcium in the blood stream, loss of appetite, nausea, vomiting, excessive urination, headaches, loss of strength, slowing of growth and, most probably, the formation of kidney stones, one of the most painful of human experiences.

Vitamin E—This is a heat-stable compound, but it can be oxidized easily, especially in sunlight, and in the presence of alkalis. Vitamin E is required by the body as an anti-oxidant for Vitamin A,

and has been shown to protect against such noxious agents a carbon tetrachloride, alloxan, and methyl cholanthrene. While it has not been shown to have a physiological effect on sexual disfunction, it does make sperm more motile, and aids in anchoring the placenta in the womb.

Because it is present in nearly all natural plant oils, its deficiency is rare. When it does occur, the deficiency takes the form of increased oxygen consumption, lowered utility of Vitamin A, progressive muscular dystrophy (nutritionally based), in men a loss of the sex instinct and, in women, possible sterility. With a USRDA of 10 *milligrams*, overdoses are equally rare, but have been reported as causing fatigue and interfering with the formation of Vitamin A from its precursor, beta carotene. A deficiency of Vitamin E during pregnancy can result in fetal damage.

Vitamin K—This vitamin occurs both in nature and is produced by intestinal bacteria in all humans. It is absolutely essential for the body's production of the substance “Prothrombin,” a glycoprotein in plasma that is converted as needed into “Thrombin” to aid in the formation of blood clots. Some medical sources refer to this as “Clotting Factor II.”

Deficiency states will prolong the clotting time of blood, and may result in multiple hemorrhages, especially in the eyes, bladder, testes, kidneys, brain, interior abdominal tissues and just under the surface of the skin. Because of its formation within the intestines, deficiencies are nearly always caused by the death of bacteria (flora). This death can be caused by exposure to radiation, oral antibiotics, liver damage and/or massive hemorrhage.

Alfalfa is the best natural source of Vitamin K, supplying about 0.8 milligrams per 3½ ounces. At this writing, there is no USRDA for Vitamin K, but some medical books show 0.25 milligram as the amount required per day for normal use.

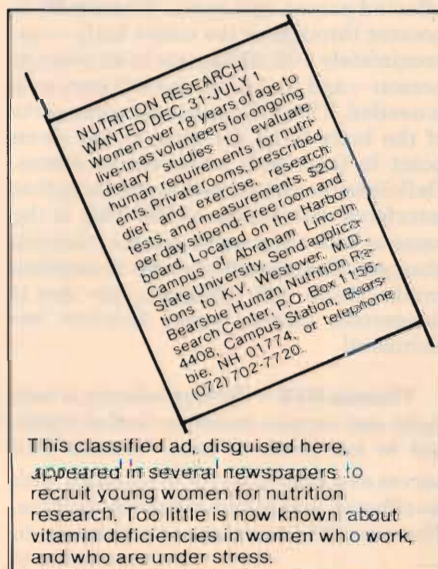
B Complex Vitamins—All of the B vitamins are water soluble, and are lost easily in cooking and food processing because water loss occurs with these activities. For example, Vitamin B1 is lost at a rate of 40 percent from cooked potatoes, and from any leafy, green or yellow vegetables. Meat, eggs, or any vegetable other than legumes lose approximately 25 percent of their B1 while being cooked. Nicotinic acid—Niacin—is lost at the rate of 25 percent from meats and all vegetables, except legumes, during cooking. Any process which removes water will remove some percentage of *all water-soluble vitamins, including Vitamin C*. Vitamin C is lost at the rate of 60 percent from cooked vegetables, other than legumes. Most, if not all, of these losses are made up in the form of “added” vitamins by responsible food processors. These added vitamins, in chemical form, are equally as water soluble as natural vitamins,

and can be lost as easily when canned, bagged, freeze-dried or other processed foods are heated and/or drained. The loss of that 60 percent of Vitamin C can easily make people really sick in a survival situation.

Vitamin C—This has been called the most fragile of vitamins, and is easily lost during cooking, and can be oxidized readily, especially in the presence of iron or copper ions. It is synthesized by all higher plants and all animals, except primates, and some rodents. While human body tissues are saturated with Vitamin C, it has a body half-life of only 16 days. If humans stop the intake of Vitamin C, a level of 3,500 milligrams would be depleted to about 220 milligrams in only 64 days—if these humans *did not require additional Vitamin C for any reason*. Because external conditions affect the amount of Vitamin C that people require, they would run out of it long before that. For instance, working in cold climate raises the USRDA from 60 milligrams to between 150 and 250 milligrams per day. The effects of trauma increase the body's need to about 75 milligrams per day for mild cases on up to 300 milligrams per day in severe cases. And the amount stored in the body is rapidly depleted by major trauma.

Vitamin C is needed by the body for the formation of collagen, the primary substance that heals wounds and produces scar tissue. It also regulates the production and uses of dentine, cartilage and bone salts/callus, making it absolutely necessary for the repair of damaged bones, and the formation and growth of teeth. Additionally, it is needed to make minor blood vessels—capillaries—function properly. It aids in the absorption and usage of iron, and helps red blood cells to mature. It is used in the metabolism of the aromatic amino acids. It's necessary for the body's production of *noradrenaline*, which is used in the transmission of nerve signals. It is thought to be related to the body's usage of Vitamin A as well.

Vitamin C deficiency causes many problems, not the least of which is *scurvy*. This disease results in swollen gums that bleed easily, looseness of teeth, loss of capillary integrity, causing bleeding under the skin, and black-and-blue spots, poor appetite, anemia due to blood loss and reduced copper/iron absorption, trouble breathing, and racing heartbeat. Additionally, Vitamin C deficiency delays healing of wounds with lowering of tensile strength being present in those wounds, either completely or partly healed. Cells that normally cause the healing of wounds will not mature and will fail to lay down collagen. New capillaries will not enter the healing tissues. Hematomas—blood masses such as bruises—will not be reabsorbed as quickly as when Vitamin C levels are normal. The total appearance of these symptoms may take anywhere from 3 to 12 months in adults, but some symptoms may appear in as little as a few



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AVITAMINOSIS

weeks under proper conditions, such as major trauma or working in a cold climate. If scurvy should appear in either adults or children, it can be reversed by administering Vitamin C. For adults the dose is 100 milligrams 5 or 6 times per day. For children administer 25 milligrams 4 times per day. These doses should be spread out evenly over the 24 hour period. For surgical patients, the dose between 150 and 300 milligrams per day should be given, and for burn patients this should be upped to anywhere from 10 to 100 times the normal amount, depending on the extent of the burns. Major trauma or burns can deplete the body's Vitamin C totally in as little as 2 days!

Overdoses are possible in people who have no need for increased amounts of Vitamin C, with doses of several thousand milligrams being responsible for poor copper absorption which results in anemia. Doses of around 12 grams (*that's 12,000 milligrams*) per day possibly will result in formation of kidney stones, renal tubular acidosis and crystals in the urine, none of which makes people feel good!

Vitamin B1—Thiamine—B1—is required for carbohydrate metabolism, hearty appetite, normal digestion, growth, fertility, lactation, nervous tissue function and formation, gastrointestinal muscle movement and the formation of acetylcholine. A deficiency of Vitamin B1 causes a number of serious problems, some of which are nearly beyond belief: mental instability, absent mindedness, difficulty in thinking clearly, vague fears up to paranoia, and feelings of uneasiness. The physical problems are no less serious: retarded growth in children, loss of ankle and knee reflexes, including calf and thigh muscle weakness and pain, cardiac beriberi with swelling and/or water retention of the heart and possible right side heart failure, dry beriberi, affecting the nervous system, brain lesions, convulsions and, finally, death. In milder cases of B1 deficiency the only problems that may appear are the loss of appetite, and nausea and vomiting.

Vitamin B1 needs are directly related to how many calories are taken in per day, with the minimum amount somewhere between 0.27 and 0.33 milligrams per 1,000 calories. The body cannot store much B1, with the total amount present only sufficient for a few days of normal functioning. Anything that interferes with the absorption of B1 will result in its deficiency. Diarrhea that persists for several days, oral antibiotics, raw fish and/or raw shellfish, raw red cabbage, raw brussel sprouts, some berries, and intestinal disorders will lower the absorption ratio. In the mid 1960s John W. Campbell reported in *Analog* magazine an instance in which hallucinations were suffered by one of his daughters after she had taken antibiotics

for only five days! The treatment was 200 milligrams of Vitamin B1. The problem was ended in five hours! While hallucinations are not normally listed as one of the symptoms of B1 deficiency, other mental problems tend to support his report. Major trauma rapidly depletes what little B1 is stored in the body, with the body's need for B1 rising to approximately 10 milligrams per day in severely injured persons. Any deficiency increases the chances of bacterial infection, and such infection can produce a deficiency of all of the B Complex vitamins. Even a fever of as low as 100.0 degrees can double the need for B1. The USRDA is very low for this vitamin, between 0.2 milligrams for infants and 1.5 milligrams for teens, with need based on calorie intake as noted previously. Because Vitamin B1 is water soluble, it is easily passed through the body, hence overdoses are nearly impossible. There are no known dangers involved in taking too much B1. However, there are unconfirmed reports that the U.S. armed forces experimented with megadoses during the Vietnam War which resulted in hyperactivity of the subjects. Ingestion of live yeast can lead to B1 deficiency.

Vitamin B2—Riboflavin—B2—is neither heat- nor light-stable and can be destroyed by exposure to either. Up to 85 percent of B2 found in cows, milk is destroyed by exposure to sunlight, rapidly. Vitamin B2 is essential, along with B6, for the conversion of the amino acid tryptophan into nicotinic acid (Niacin). The retina requires B2 to allow it to adapt to light. Individual cells require B2 for the conversion process that allows them to "breathe."

Deficiencies can be caused by anything that interferes with absorption such as listed for B1—especially diarrhea. Vitamin B2 is depleted rapidly by major trauma, with those needs being set at around 2 milligrams per day for mild trauma and 10 milligrams per day for severe trauma. The USRDA is based on an intake of 0.5 milligrams per 1,000 calories of food, and varies from 0.4 milligrams per day for infants, up to 2.0 milligrams per day for pregnant women.

Vitamin B2 deficiency symptoms include eye problems such as cataracts, cloudy or ulcerated retinas, dim vision, impaired color vision, burning and itching, congestion of the rear portion of the eyeball, abnormal color of the iris, and mild to extreme sensitivity to light. Lack of B2 can result in skin problems, including a kind of false psoriasis, in particular at the corners of the nose and ears, and around the scrotum and labia majora; in sores on the lips, cracks or fissures on the lips, and at their corners; in changes in the skin of the nose making it look and feel like shark skin; and in some impairment of wound healing. Children stop growing when deficient in B2, and adults may die when the deficiency endures long enough.

Finally, B2-deficient mothers run the risk of producing malformed children. Vitamin B2 deficiency is usually found along with other B-Complex deficiencies. As with B1, B2 overdoses are nearly impossible. Deficiency has been known to lower antibody production, thus increasing infection.

Vitamin B6—Pyridoxine, a hydrochloride salt known as Vitamin B6, is heat and alkali-stable, but is easily destroyed by light, in particular ultraviolet radiation. The other two forms of B6, Pyridoxamine and pyridoxal are readily destroyed by exposure to air, heat, and light, particularly when in dilute solutions. Vitamin B6 is necessary for the body's processing of many of the amino acids, and more than 40 different fats and/or fatty acids, in particular the unsaturated one. It is needed for antibody production and the normal functioning of cells.

Vitamin B6 deficiency produces most, if not all, of the skin problems associated with B2 deficiency, as well as some of those presented by lack of niacin. Symptoms are numbness and tingling of the hands and feet, as well as hyperirritability, extreme response to any sensory input, and loss or impairment of the senses of position and vibration. Also occurring with Vitamin B6 deficiency are anemia and unusual blood cell size problems, convulsions in infants, loss of appetite, nausea, vomiting, lethargy, and confusion. An unnatural desire to sleep rounds out the symptoms of B6 deficiency. The USRDA for adults is 2.0 milligrams per day. Major trauma increases this requirement to as much as 40.0 milligrams per day. If you should have injectable pyridoxine hydrochloride in your survival medical supplies or should you manage to forage it during an emergency, be advised that intramuscular injections of it will cause pain, sometimes considerable, at the site of injection.

The symptoms of B6 deficiency may vary greatly depending on the age of the affected person and cause. Vitamin B6 is present throughout the entire body—approximately 100 milligrams in an average person—and its loss or use will vary as it is needed. This will cause only some parts of the body to be deficient at any given point in time, with attendant problems. Deficiency can be caused by anything that interferes with intake of B6. This is the same as with other water-soluble vitamins, also penicillamine will block B6 absorption. Intake above 300 milligrams per day is dangerous, causing nerve function impairment!

Vitamin B12—Cyanocobalamin, is both light- and oxygen-stable, as well as resistant to low levels of heat. Vitamin B12 serves as a growth factor in children, with no effect on weight gain in healthy children. However, B12 functions to add height to

Continued on page 65



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This fixed-stock model of the 12-gauge SPAS functions either as a gas-operated semi-automatic or a pump-action shotgun. The magazine holds 9 rounds. Metal parts are finished in dull matte black. This prize, valued at \$600, is presented to the winner by:

F.I.E.

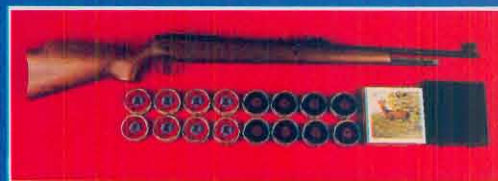
P.O. Box 4866
Hialeah, FL 33014
Telephone: (305) 685-5966

THIRD PRIZE:

Barnett Thunderbolt

This camoed crossbow features a skeletal alloy stock and a graphite reinforced fiberglass limb. With bolts, the crossbow has a value of \$350, and is presented as a prize by:

**Barnett
International, Inc.**
P.O. Box 934
Odessa, FL 33556
Telephone: (813) 920-2241



FOURTH PRIZE:

RWS Model 50T 01 Air Rifle

This .177 caliber single-shot rifle uses a spring-piston system, cocked by an under-lever, to fire the pellet. Included are 7,000 pointed and flat-nosed pellets, game targets and a pellet trap, for total value of more than \$300. From:

Dynamit Nobel of America, Inc.
105 Stonehurst Court
Northvale, NJ 07647
Telephone: (201) 767-1660

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Turn the Page for Contest Rules, Entry Form and MORE PRIZES!



BLOCKBUSTER



FIFTH PRIZE:

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Dynamit Nobel of America, Inc.
105 Stonehurst Court
Northvale, NJ 07647
Telephone: (201) 767-1660



SIXTH PRIZE:

Kolaps-A-Tank

A 275-gallon water storage tank, this unit comes with 1½-inch gate valve and 8-inch nipple. The Kolaps-A-Tank, valued at \$275, can be used to transport water to retreat sites. This prize is presented by:

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Cave Junction, OR 97523
Telephone: (503) 592-3615

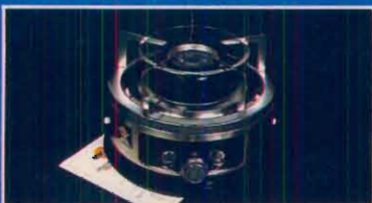


SEVENTH PRIZE:

Sea Cloud Inflatable Boat

This 2-man inflatable comes with inflating/deflating foot pump, oars, rowlocks and a gunwale safety line, plus a carrying case. The boat's retail value is \$70. This prize is presented by:

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Telephone: (800) 824-9988



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Survival, Inc.
2322 Artesia Boulevard
Redondo Beach, CA 90277
Telephone: (800) 533-7415



NINTH PRIZE:

Special Weapons Case

Fabricated from black Cordura nylon, this assault rifle case features three pockets with Velcro closures for magazines and miscellaneous gear. The retail value of this prize is \$75. The case is presented by:

Assault Systems
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St. Louis, MO 63026
Telephone: (800) 325-3049

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ADDRESS _____

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BONANZA!



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869 Horan Drive
St. Louis, MO 63026
Telephone: (800) 325-3049



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Telephone: (800) 325-3049



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FIFTEENTH PRIZE:

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A basic computer system is all that's required to contact others.



This video display shows the "Survivalist BBS."



Sending messages by computer is very secure, and rapid.



The basics are a disk drive, at the left with the telephone on top, a computer, right, and a modem, center.

WHEN THE EDITOR of *American Survival Guide* asked if I would be interested in writing an article on telecommunications for the survivalist community, I, as would any other aspiring literary genius, said "You Bet!" I quickly cranked in a sheet of my best typewriter paper and prepared to enlighten the readers of this magazine. I stared at the paper. The paper stared right back at me. This wasn't going to be the piece of cake that I had thought it would be. How was I going to deliver enough information to explain the subject without manufacturing a readable sleeping pill? First it was necessary to examine how computer technology can be put to work for survivalists, and then one can judge for himself how well I succeeded!

One of the benefits of the computer age is the ability of the individual, to obtain information from tens of thousands of sources throughout the world. It requires only the use of a computer, a disk or tape storage device and a **MODEM**.

Computer Talk—Modem is an acronym for **MOD**ulator-**DEM**odulator. It may sound like something that belongs on the space shuttle. However all a modem really does is allow your computer to talk with another computer over the telephone lines. The modem translates the digital signals coming from your computer into analog signals, which sound like whistles or tones, that are easy to send over telephone circuits. Another computer at the receiving end will have a modem which reverses the process, changing analog back into digital, to allow the computer user at that end to read your messages. Of course, your modem will translate messages that the other person sends to you. This allows you to carry on a two-way "conversation." Obviously, if you simply wished to type messages back and forth you would do better to pick up the phone and talk, however using a computer to send letters and messages, as well as bulk information such as files, can add a degree of security and speed that you have yet to experience. Whole messages or long tracts of information can be constructed on the computer and saved on your disk or tape drive and then at a later time can be sent almost instantly to another computer in a distant location.

Baud Rate—The technology involved in making a modem is very advanced. Using a modem, on the other hand, is quite easy. Modems send and receive information at various speeds called "baud" rates. The baud rate refers to how many bits of information per second are being sent. The most common baud rate for home computer use is 300 baud. Higher level modems (and higher priced) used 1200 baud or more, but these are most often used by businesses or individuals who use their modems extensively. Today many modems give you a choice of baud rates from 110 to 1200.

There are generally two types of computer modems available: direct-connect (often called "modular") and acoustic. The direct-connect is sometimes more expensive, but it is the preferred type of modem. As the name implies, the direct-connect modem plugs directly into your telephone line and sends a clear signal with no outside noise interference. There are fewer errors and there are many models from which to choose. The price range runs from under \$50 to over \$1,000! The acoustic modem is becoming an outmoded device. Some manufacturers, the most notable being Radio Shack, still provide acoustic modems. However, most people using modems have found the direct-connect units preferable. Generally, the acoustic modem requires that you dial the telephone number of the computer with which you wish to communicate. When you hear the computer tone at the other end you put your telephone receiver (you must use a standard desk phone) into two soft rubber cups which hold the receiver in place, you then turn on the modem and begin "talking." The problem with the acoustic modem is that sometimes external room noise such as kids yelling or dogs barking can interfere with information being transferred and cause errors in the data or can disconnect the line altogether.

Installation—Many readers may think, "Sure, a modem is all fine and dandy, but I'm no electronics whiz. Where do I plug it in and how can I use it?" The connection is basically this: connect your phone to the modem, connect your modem to the wall telephone outlet and then plug the modem into the computer. That's it! Usually all the cables you will need will be included in the package with the modem when you purchase it. If they're not, buy a different modem. There are plenty of other manufacturers around who believe in giving you your money's worth.

Okay, so you have a modem and you have it plugged in. Do you now simply turn it on and go? Of course not! Where's the challenge in that? At this point try to picture your modem as your own personal messenger boy. As with a real live messenger boy, your modem will need instructions to complete the task that it will be assigned. With a live messenger boy you simply talk to him in plain English and make sure to give him a tip. The modem also needs instructions. These instructions, however, are not verbal. Instead, they are listed into a program called "terminal software." This is a program that is listed into the computer, and allows full communication with other computers. It also gives you a list of commands to use that will allow you to send, store or receive information. Some manufacturers include this terminal software and some do not. The reason for this is that the software must be designed for your specific type of computer. The terminal software for an Apple IIe, for examples won't work cor-

rectly in a Commodore 64 and vice versa. Manufacturers whose modems are to be used with one type of computer will usually include the software with the modem. This is probably the best way to go because it allows the convenience of having the modem ready to use as soon as you get it home. It will also be cheaper because the software is included in the purchase. If, for some reason, you don't like the terminal program that comes with your modem, you can substitute it with another terminal program, so long as it is compatible with your type of computer.

Trial Run—Let's say you're all set to go. Your modem is set up and plugged in and your computer is on. Across town there is a friend, a fellow survivalist, who is a member of your survival group. Let's say, also, that he needs the names and addresses of several new members of the group for his file. You could write down the information and send it by mail, but mail is easily intercepted. You could take the time to talk openly on the telephone, but it's very easy to tap phone lines, and this method would be time consuming. It's easier and safer to make an electronic file of the names and addresses, then store them on your tape or disk drive until you wish to send them. Now, because you want to send this information to your friend, this is what you would do. After the terminal software is loaded, your friend's telephone number is dialed. You can dial this number by hand or have the modem dial it for you. Many modems will re-dial the number, if the line is busy and will keep re-dialing until it makes contact. When your friend's computer "answers" the phone (automatic with some modems), his modem will generate a tone called a "carrier." Your modem will recognize this carrier and your computers will now be linked together. If you type in a message, or just type in "Hello," your friend will see it on his video screen and vice versa.

You are now in what is called the "terminal model." No matter what type of terminal software you are using, you will now have a list of options given to you on your video screen. This is called a "menu." Select the command that loads the file you wish to send. The file will load from your tape or disk drive into an area in the computer called "buffer." This is an area reserved by the terminal program strictly for saving data or receiving data. By typing the appropriate command, the file in your buffer will be sent over the telephone lines to your friend's computer across town. The file may have taken hours to type, but using the computer you can send the entire file in minutes or seconds!

BBSs—There is another use for your modem and computer. Across the country there are an increasing number of public message boards. These are called Bulletin Board Systems (BBSs). Basically, a BBS is a central computer that many other com-

MODEM

puters can tap into. These boards are used for sending or receiving information, files, formulates, etc. In fact, anything you can write down can be put on a BBS. This includes mail for one person in particular or a public announcement.

So, how do you use a BBS? For the most part, contacting a BBS is the same as calling your friend across town. The only difference is that the main (or host) computer will ask you questions that must be answered before you can use the system. To explain:

When you first called your friend across town and made contact via computer, the only thing you had to do was type in "Hello!" to let him know you were there. When you contact a BBS, other things are necessary. If you're using a particular BBS for the first time, generally you will be asked to type in your name and telephone number, and often your address as well. Some people dislike this. However it is necessary to keep out prank callers and troublemakers that sometimes invade public BBSs with obscene or illegal material. The system operator (or *sysop*) who runs the board is responsible for its content and is very security conscious. It is beneficial for everyone to give a verifiable address or phone number because it is reassuring to know that the other people on the BBS are, in fact, who they say they are! Once you have given your ID (which is never revealed to anyone other than the *sysop*) you will be given a password. This is your personal password and should not be revealed to anyone. This prevents prank callers from leaving mail to other people while using your name. It also prevents someone from reading your personal electronic mail. Now, one question usually arises at this point. How secure is all this electronic information?

Security—Security is important to survivalists for many reasons. If you are stockpiling food, ammo, gold or whatever else you may want, you leave yourself open to a degree of ribbing and chiding from your neighbors. Of course when disaster strikes where are all your neighbors going to go? *To you!* If you have what they need and they **KNOW** you have it, you may have to deal with a pack of rabid people who once were your friends. For this reason and many more, security becomes a major factor to survivalists.

When you contact your friend across town or when you contact a BBS you can carry on a typed conversation. Obviously, this is slower than talking directly over the phone, but it affords a degree of security.

Anyone in the next room will hear only the clicking of keys from your keyboard. Also, anyone who may be tapping the line will hear the tones and whistles of the carrier signal. Certainly anyone with the right equipment could still de-code the signal, but if he is *that* determined, he will bug you no matter what you do! The idea is to make it as difficult as possible for the wire tapper without making your own communications difficult.

You now know how to plug in your modem, how to make contact with other computer users and even some uses for modems. You may be wondering whom you can call, how to find other survivalists via computer and, of course, how much will all of this cost?

Cost—Let's start with cost. As a general rule, the more you pay for your computer, the more you will pay for all of your peripheral equipment. So goes the price of modems. Apple and IBM are often considered the high end of the personal computer market. These machines often have business applications. The price, therefore, is significantly higher than other computer models. For example, a 300-baud direct-connect modem, the SSM Transend for the Apple IIe, retails for around \$279, including the software. Promethius Products of Fremont, California, makes an insert card modem for the Apple Macintosh. These cards are actual circuit boards that you can insert into a special slot inside the computer. An insert card modem that uses both 300 and 1200 baud would retail at about \$449 from Promethius. Also from Promethius, for use in IBM computers, is the Compert 3 1200b insert card modem with software. This modem operates on 300 or 1200 baud and retails for about \$399. All of these modems have special features that are too numerous to list here. If you own an Apple or IBM you may request a product catalog from Promethius Products at 45277 Fremont Blvd, Dept ASG, Fremont, CA 94538. Of course there are numerous other places to find a modem for your Apple or IBM. The first place you may wish to look is the dealership from which you bought your computer. Another idea would be to read the ads in the dozens of magazines that are geared to home computer use. Just check your nearest newsstand.

Radio Shack sells the famous Tandy computer line. While these computers are generally aimed at business-level users, they have been popular with home use as well. While there is little difference in the

price of the Radio Shack computers, as compared to Apple or IBM, the modems for the Radio Shack computers are generally lower in price. The direct-connect Modem I, from Radio Shack, sells for about \$99. There are a few other modems available as well, including an acoustic modem. The owner of a Radio Shack computer can drop into his nearest Radio Shack dealer for information on models and pricing.

On the lower cost end of the personal computer market are the popular Commodore 64 and the Atari home computers. Commodore appears to have a significant lead over Atari in the market, at least for now. Because of this popularity, there are numerous support companies that offer modems at very low prices. For instance, the basic Vicmodem from Commodore sells in such discount stores as K-Mart and Toys-R-Us for about \$49. This includes software and free time on the CompuServe computer network. Many dozens of modems are available through stores and computer magazines for these two machines. One modem for the Commodore 64, the 300-baud Westridge 6420, has become popular because of its ease of use, and features such as auto-redial and the ability to set the modem to send or receive information, even when you are not at home. It includes software and is available from Toys-R-Us or Westridge Communications, 6624 Valjean Ave., Dept ASG Van Nuys, CA 91406. It retails for about \$79.

The Group—If you have a group of survivalists together now then you are one step ahead. You may do well to investigate the possible advantages of telecommunications for your group, especially when members live some distance apart. If you wish to communicate with other survivalists in an effort to form or join a group, the best way is to leave a message on the public message board of the particular BBS that you call. You *will* get a response! There are more survivalists out there than you may think.

Usually the BBS that you contact will have a listing of other BBS boards in the area and across the country. This is the best way to expand your knowledge of using these boards. Remember, when you initially contact a board you will be asked if it is your first time using that particular board. If you answer "yes" you will be given very simple but very detailed instructions from the host computer on how to use the board. After "talking" with one

or two of these boards you will feel like a computer "pro!" That's just how easy it is.

I tried to locate a strictly survivalist-oriented board and unfortunately, I came up empty-handed. This is not to say that they don't exist. It's just difficult to find them. To help fill this void, I made contact with the sysop of a local BBS and asked whether he would be interested in allowing me to operate what is called a "sub-board." This is like a BBS inside of a larger BBS. He was enthusiastic about the idea. The Chicago area's first survivalist BBS should therefore be operational by now. The BBS, called "The Bread Board," is located in Willow Springs, Illinois, at (312) 839-1928. Simply make contact via modem and follow the computer generated directions. When you are presented with a menu of sub-boards simply type in the code letter given for the "Survivalist Board" and you're in business.

Meantime, if you would like to get your own group started or would just like to explore the outside world, here are a few general interest boards around the country: The IBMPC Computer Center, Santa Monica, California, (213) 829-1487; The Manhattan Message Manager, New York, New York, (212) 879-5182; and The Atlanta Board, Atlanta Georgia, (404) 928-3005.

There should be information on other boards through these systems. If you desire a long printed listing of BBSs across the country, I can provide you with one. The list I have is current and has literally hundreds of BBSs on it. Most likely there will be a few near you. This list includes BBSs designed for everything from helping you to repair your car to finding a new lover (no kidding!). You can send a \$5 money order to cover postage and handling to Jim Harris, P.O. Box 537, Dept ASG, Berwyn, IL 60402.

Obviously there is no way to cover every detail of the use of modems in this article. One could very well write a book on the subject. However, this article is designed to help survivalists make computer contact and to get us together as a cohesive group. After all, if you want to be heard in this society and if you want to get action from government, you have to be able to pull together. Survivalists like to think of themselves as independent individuals and there is nothing wrong with that, but individuals can still work well inside a group. If using the latest technology to link ourselves together will help us all to survive what may be in store, then let's use it to the fullest. ●

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PRISON GANGS

Continued from page 17

pects were arrested and convicted, but the money was never recovered. Vargas was arrested 20 days after the Lloyds holdup when he and another EME member, Victor Murillo, dressed themselves in security guard uniforms and attempted to rob the main branch of the Bank of America in Fresno. When the police arrived, the suspects were getting ready to leave with \$186,000.

In a follow up investigation on Vargas police discovered that he had two 9mm pistols, two semi-automatic rifles, one AR-15 semi-automatic rifle, and one .357 Magnum revolver.

Killers—Like La Nuestra Familia, the Mexican Mafia will kill persons who belong to rival gangs. Walter Hallman, Sr., was found stabbed to death in the San Diego county jail. Augustine Rivera, in custody on robbery and burglary charges, was subsequently charged with manslaughter. At the trial a former jail trusty testified that he saw a knife passed to Rivera, and that Rivera had told him that he (Rivera) was a member of the Mexican Mafia. At Rivera's sentencing, the issue of Hallman's affiliation with the Black Guer-

rilla Family was a possible extenuating circumstance. The judge in the case, however, commented on Rivera having "spun his own web" in regard to his Mexican Mafia affiliation, and sentenced him to prison.

In Sacramento County a major Mexican Mafia case centered on the murder of Ellen Delia. Ms. Delia was alleged to have been killed to prevent her from presenting testimony to California State officials about the Mexican Mafia's infiltration of "Project Get Going," an East Los Angeles drug program. Four men including Ms. Delia's husband, Michael, were charged with the "hit." Other investigations of the Mexican Mafia's organized "white collar" style criminal enterprises have been developed over the years and were the focus of an official report which stated the following:

"Information developed by a Department of Justice follow-up to the East Los Angeles drug program audit indicates that at least five Mexican Mafia figures were connected in various ways with Project Get Going. Probable irregularities and illegal conduct in the administration of the Get Going program have been identified both by the earlier Department of

Justice investigation and the SITF inquiry. Probable illegal conduct includes solicitation of payment for nonexistent services and misappropriation of funds due employees. It is noted that Michael Delia, Jr., the former director of the program is currently charged in Sacramento with the murder of his wife, Ellen Delia, who was associated with him in Project Get Going."

In an interview with a former Mexican Mafia member, the ex-gangster admitted that the EME had penetrated a number of social programs. He described how, in one instance, the elected leader of a community group coalition was forced out of his position through intimidation in favor of the gang's nominee for office. He also spoke of manipulation of legitimate community programs through an appeal to cultural solidarity. Once having gained a key position, it becomes an easy matter to rape an agency's budget. As an example, he reported that it was a simple matter to hire persons, terminate them verbally a few weeks later, but continue them as employees on paper. Seemingly legitimate checks could then be cashed by gang members.

Like La Nuestra Familia, the Mexican Mafia also kill members who do not follow

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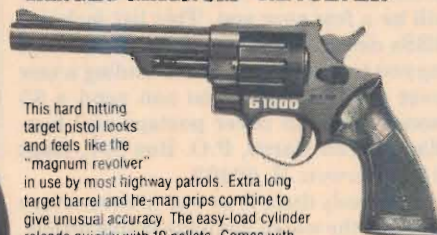
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instructions. Four Mexican Mafia gang members were arrested in Fresno for murdering Gilbert Roybal. One of the four suspects was also charged in the Ellen Delia murder. During the Roybal trial, a gang-related witness who went into the United States government's witness protection program, testified that Roybal was "hit" for failing to share the proceeds from the sale of amphetamines. The witness also implicated Michael Delia in two other murders in Southern California.

A question of the Mexican Mafia's ability to compel others to commit crimes came to light as the result of a market armed robbery in Riverside, California. In this instance the suspect was taken into custody by police and found to have the letters NF and San Jose tattooed on his arms. Under questioning the suspect stated that he had been beaten and forced to commit armed robberies for the Mexican Mafia.

State of California law enforcement officials report that all of these gangs present a continuing threat to the state's public safety. In reality the entire country can be found to be concerned about these extremely dangerous organizations. Research reveals, that the gangs covered in this article are by no means limited to the State of California. Mexican Mafia groups can be found in prisons in Colorado and the Midwest. The Black Guerrilla Family has membership in almost every penitentiary in the United States, and likewise the Aryan Brotherhood. Furthermore, as the country's prison population expands—and it is expanding—and additional institutions are built to handle the problem, so grow the gangs.

America's Survival—America is at a point where if it is going to survive it can no longer ignore these internal organizations who are literally taking over the country and holding its citizens in a constant state of fear. Every year or so, the United States Congress spends millions in tax dollars to conduct hearings and to create commissions to "study" the problems of crime, both organized and disorganized. Every time they make the papers and television news with felons under guard, wearing bags over their heads and telling the media-conscious politicians the same thing everyone has known for 30 years: that there is a Mafia, that there is drug traffic, that the bad guys are winning the crime war, and then they pack up their "dog-and-pony show" and fade away—until they are again desperate for some publicity. Crime marches on!

Unless there is a movement in the United States to re-establish law and order, and to crush the gangs, organizations and syndicates, the country has no chance for survival. ●

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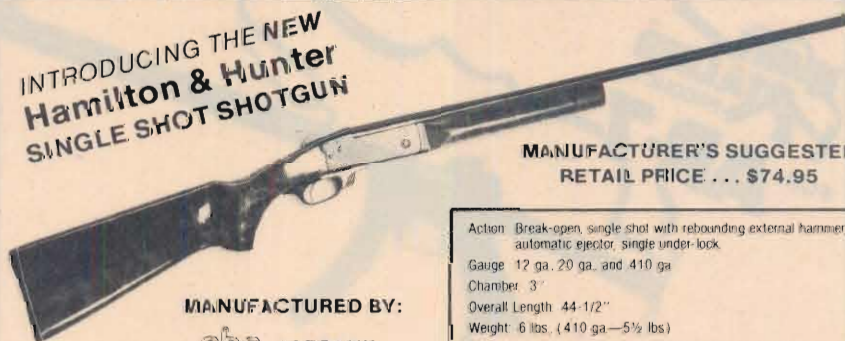
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AR-15 SNIPER

Continued from page 23

drop compensator and parallax adjustment for \$189, and the SS-1 with rubber armor for \$120. AR-15 bases for the SS-1 and SS-2 are also available from Beeman.

Although all the scopes and mounts mentioned above keep their zero when the scope is removed and remounted, the mounts won't always bring the scope exactly back to zero when remounted. For precise shooting, you should mount the scope, zero it, and leave it in place.

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7.0	—	7.3	mHz
10.1	—	10.109	mHz
10.115	—	10.15	mHz
14.0	—	14.35	mHz
21.0	—	21.45	mHz
28.0	—	29.7	mHz
50.0	—	54.0	mHz
144.0	—	148.0	mHz
220	—	225	mHz
420	—	450	mHz
1215	—	1300	mHz
2300	—	2450	mHz
3300	—	3500	mHz
5650	—	5925	mHz
10.0	—	10.5	gHz
24.0	—	24.25	gHz
48.0	—	50.00	gHz
71.0	—	76.0	gHz
165.0	—	170.0	gHz
240.0	—	250.0	gHz

Above 300 gHz

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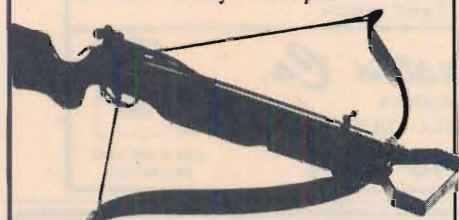
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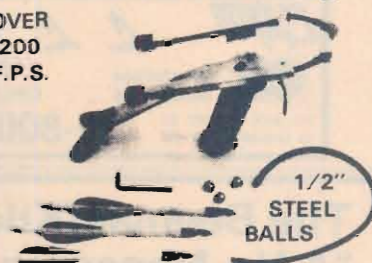
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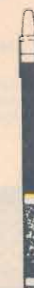
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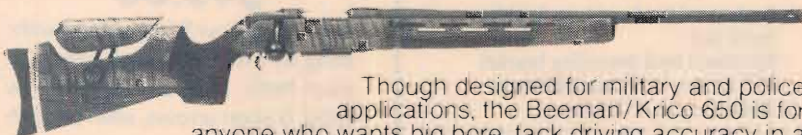
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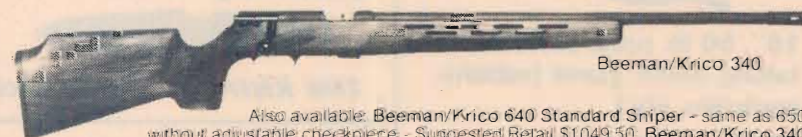
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SHERIDAN CO₂ PPP

Continued from page 25

that they were not completely filled with the washable dye, and that some of the clear vinyl plastic pellet casings seemed particularly leathery.

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AVITAMINOSIS

Continued from page 52

overweight youngsters until they conform with correct height/weight ratios. Moreover, B12 will add weight—given proper calorie intake—to underweight children. Vitamin B12 is needed for the body's conversion of certain amino acids, and is absolutely necessary for normal red blood cell development and function. It is used in *microgram* amounts in the treatment of various types of anemia, and is usually given by injection, rather than by mouth for those problems.

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Continued on page 66

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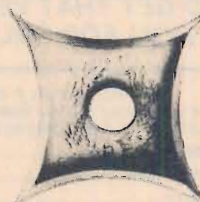
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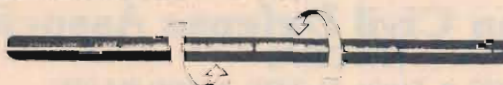


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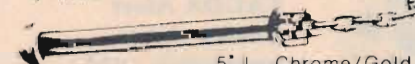
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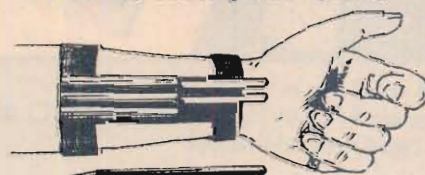
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AVITAMINOSIS

Continued from page 65

dilate, and interfere with circulation.

Skin problems, such as eruptions that resemble sunburn may appear. Sores may appear, change color and darken, fall apart and cause scars. These sores are easily affected by sunlight and any kind of heat, and they may become inflamed and overly sensitive to pressure or circulation problems.

Central nervous system problems, such as damage to ganglion cells in the brain, impairment of nerve impulse transmission, slowly failing vision, headaches, dizziness, loss of ability to sleep, depression, memory loss or impairment, any of the other mental problems listed under B1 and B6, and problems in walking can result from a niacin deficiency, and is usually found along with other B-Complex vitamin deficiencies, and may be the cause of them. Pellagra usually is aided in its development by a combination of hard physical labor and exposure to sunlight. In some non-specific circumstances diabetics may develop niacin deficiency. Diets containing large amounts of the amino acid, leucine, may interfere with the conversion of tryptophan into nicotinic acid.

The effect of trauma raise niacin requirements to as much as 100 milligrams per day from the USRDA of 13 to 20 milligrams per day. Niacin is rapidly depleted by major trauma because of the low amount present in the blood and liver which together contain approximately 100 milligrams.

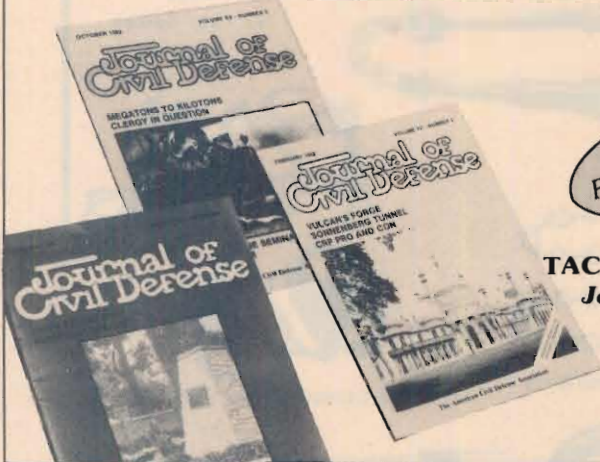
Biotin is a heat- and light-stable vitamin that exists in both water-soluble and water-insoluble forms. It is relatively unaffected by normal cooking processes, but the water-soluble form can be lost from cooked foods that have been subjected to total water loss. The body requires Biotin for the conversion of various "acetate's" and acids, including the amino-acids, and is used functionally in the body's processing of "Pantothenic Acid," another of the B-Complex vitamins. Doctors have successfully treated cases of childhood "dandruff" with Biotin.

Biotin deficiency symptoms include dandruff, skin lesions, unusual gray skin color, muscle pain and/or incoordination, unusual desire for sleep, lassitude, depression, loss of appetite and localized nerve disfunction. Deficient states may come about due to lack of dietary intake, impaired synthesis by intestinal microorganisms through use of oral antibiotics, radiation exposure, etc., or by the presence of avidin in excessive amounts in the diet. Avidin is a glycoprotein that is present in, as far as is known, all egg whites. Because egg yolks contain large amounts of biotin, the presence of avidin is not normally a problem. But, if for any reason a diet

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AVITAMINOSIS

should contain no egg yolks, the avidin will combine with any biotin to form a new, more stable complex that can't be used by the body. The USRDA for biotin is about 300 micrograms. Dietary sources of biotin are relatively low, with 3½ ounce portions of most foods supplying less than 10 micrograms each. Nuts, fresh whole eggs and beef liver all contain much higher amounts, and sprouting seeds contain more than enough per portion to meet the USRDA. Because of the low potential food source intake, overdoses are nearly impossible.

Pantothenic acid, another of the B-Complex vitamins, is stable in air, but becomes unstable when subjected to dry heat, as in baking. This vitamin is essential for carbohydrate and fat metabolism, as well as cell growth, and central nervous system development. Human bodies require both biotin and folic acid in order to make use of any ingested pantothenic acid, and pantothenic acid itself is required for the body to use other B-Complex vitamins such as B2.

As few as 15 years ago, there were medical authorities who did not recognize any deficiency signs of this vitamin, and the USRDA had not been firmly established at 10 milligrams per day as it is now. Most of the deficiency symptoms are either similar to or identical with those of other B-Complex related problems. Burning and itching, along with numbness and tingling of the hands and feet, have been attributed to lack of this vitamin. So have mental problems, such as headaches, being easily upset, or quarrelsome and hot-tempered. However, other, less-common problems such as dizziness, sudden heart rate increases above normal upon exertion, lowered blood pressure when standing upright, constipation, indigestion, weak hand-unclenching action, and hyperactive deep tendon reflexes. Because it is present in virtually all foods and produced in human intestines by the bacteria *E. Coli*, it is nearly impossible to be deficient under normal circumstances! Because the concern of this article is not with normal times, and because anything that would kill intestinal bacteria would leave people wide open to becoming deficient, it is necessary to be prepared to handle this, as well as other, deficiencies. The effects of trauma alone could cause such a deficiency as mild trauma raises the requirement to around 18 milligrams per day and severe trauma ups it to around 40 milligrams per day—four times the USRDA! A note of warning to diabetics: There is an opinion that deficiency lowers the tolerance to insulin. Check this with your doctor.

Folic acid is relatively unstable and is

Continued on page 68

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AVITAMINOSIS

Continued from page 67

easily lost from foods stored at room temperature and during cooking. Exposure to sunlight rapidly destroys Folic acid that is present in solutions. Human bodies require this vitamin for normal blood production, prevention of several types of anemia, particularly nutritionally based anemia, the normal metabolism of growing cells, tissues and many of the amino acids. Folic acid stimulates reticulocytosis which aids in wound healing, and has been used to treat sprue, which is a chronic disease that affects the digestive system in such a manner so as to interfere with its absorption of fats and certain vitamins.

Deficiency symptoms include megaloblastic anemia, lowered blood cell production and/or altered blood cells, irritability, and, of course, sprue. The symptoms of sprue are loss of appetite, extreme weight loss and pale, greasy, unformed, foul-smelling, watery stools and/or diarrhea. In addition, Folic acid deficiency may result in stomach cramps and flatulence and inflammation of the mouth. There is some difference of medical opinion as to whether or not folic acid deficiency causes or is caused by sprue, but either way, folic acid enters into this picture. As with the other vitamins, intake can be affected by oral antibiotics such as sulphonamides, and/or anything which disturbs intestinal absorption, as well as by increased requirements. The USRDA is 400 micrograms. This is doubled by pregnancy, quadrupled by mild trauma and raised to 2.5 milligrams by severe trauma. Any deficiency during pregnancy can result in fetal deformities. Folic acid is present in most foods, with animal liver having the highest content, but most non-meat foods are quite low in this vitamin. Plant greens such as mustard, spinach and lettuce contain as much or more than any other plant source with about 50 micrograms per 3½ ounce portion.

Overdoses from natural sources would be almost impossible because toxic effects such as seizures have been reported in people who took 100 milligrams per day for several days—100 milligrams is about 250 times the USRDA!

Avoidance—Okay, by now readers have a good idea as to what will happen if any kind of a vitamin deficiency is encountered. So what can be done to insure that this will *not* happen? First and foremost, readers can determine whether the foods they have selected for storage plans are adequate to supply nutritional needs. Do these foods contain the proper vitamins? If the foods have been processed, has any attempt been made by the processor to re-establish the proper vitamin content? Have they been fortified? Fortified simply

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AVITAMINOSIS

means that some vitamin(s) have been added to a processed food. As stated earlier, many food processors—the responsible ones—add vitamins back into processed foods. The U.S. Food and Drug Administration *requires* that this be done to certain food items. Vitamin D added to milk is one example.

Contacting the processor may be necessary in order to determine whether canned, dehydrated and/or freeze-dried foods have been fortified. Or, the label on the package may tell you all that you need to know. If the information you wish is not apparent, then contact the processor. It won't do a bit of good to find out the hard way that your food stocks are lacking in the proper vitamins.

Take a look at the difference between fresh string beans (*Phaseolus vulgaris*) and the processed kind, packed into metal cans. Fresh green beans contain 600 IU Vitamin A, 0.07 milligrams of B1, 0.11 milligrams of B2, 0.14 milligrams of B6, 0.5 milligrams of Niacin, 0.2 milligrams of pantothenic acid, and 19 milligrams of Vitamin C per each 3½ ounce portion. Processing *lowers these amounts to*: 470 IU of A, 0.03 milligrams of B1, 0.05 milligrams of B2, 0.043 milligrams of B6, 0.3 milligrams of niacin, 0.07 milligrams of pantothenic acid, and 4 milligrams of C. These represent changes of 22, 57, 55, 69, 40, 65, and 79 percent respectively. Another way of saying this is that, in order to obtain the USRDA of Vitamin C from fresh green beans, one would have to eat only about 3/4 pound, whereas to get the same amount of C from *canned* green beans it would be necessary to eat 3¼ pounds. That 3/4 pound of fresh green beans would supply nearly 1/3 of the USRDA of A, 1/8 of the B1, 1/5 of the B2, 1/12 of the B6, only 1/26 of niacin and 1/50 of pantothenic acid.

Freeze dried foods may have a weight advantage (and lengthened storage times) over fresh or canned, but how many of the water soluble vitamins are left in them after processing? Even where the processor adds vitamins to the processed foods, these seem to be added by way of a chemical soup that is put onto the finished product. When foods are reconstituted, this "soup" may go into solution with the water that you use for that purpose. If it does and you discard the leftover water, what percentage of the vitamins have you tossed out with it?

Even the water or fluids present in canned foods contain some of these vitamins and discarding it will lower the amount of water, and in some cases oil-soluble vitamins!

Because of these facts, and because of the other factors shown to affect human

Continued on page 70

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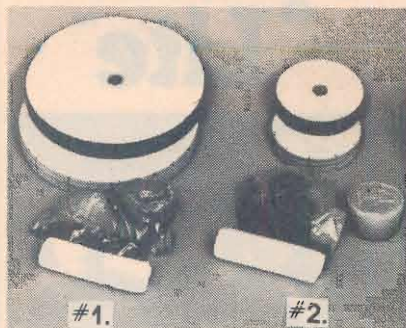
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AVITAMINOSIS

Continued from page 69

vitamin intake and/or absorption, it's obvious that survivalists should store not only foods that contain adequate amounts of the needed vitamins, but that they should also store vitamins themselves and, if possible, vegetable seeds.

Selection—Selecting vitamins for storage should be done on the basis of (1) projected need, (2) length of period that the survivalist will be without proper vitamin sources, and (3) storability of the vitamins themselves. Examine these points individually:

- Projected need is a purely subjective item of consideration, and will depend totally on what is seen as being the specific threat. Those who expect a nuclear war will wish to store all of the vitamins in their most natural form or not as they believe necessary. However, those who are preparing for something of a shorter duration will find their needs somewhat lowered.

- Duration of need depends on what is decided about projected need, but may be influenced by location, and the size and age of a family or group, plus other factors. The needs of a family of four during several months of isolation will be considerably different than those of a group of 20 for only a few weeks or so.

- Storability reflects the fact that certain vitamins are easily damaged by exposure to air. Others cannot be exposed to light of any kind. Still others are damaged by heat. For these reasons, storability may present problems. In general, single vitamin pills of low dosage are the best for storage, and should be contained in as small a bottle as possible. Bottles should be made of *brown glass*, not of any color plastic. And they should have easy-to-open, air-tight caps. Bottles should be opened as infrequently as possible in order to limit the amount of air that gets into them. Everyone who is going to take a vitamin pill from that bottle should have his or hers removed at the same time.

Overdoses—Taking too much of certain vitamins will be either as bad or worse for human health than too little of that vitamin. It is not necessary to take or store vitamin pills that contain more than two or three times the USRDA! To do that may mean considerable pain and discomfort for yourself and your loved ones. Indeed, it may mean the death of that person or persons.

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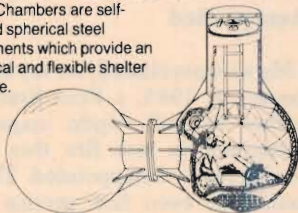
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AVITAMINOSIS

Minerals were promised in this article, but it would be impossible to cover any of them simply on the basis of importance, so the two most abused, iodine and iron, will be discussed here.

Iodine is readily available in the form of iodized table salt, and as the additive in many multi-vitamin/mineral tablets. Usually this iodine is in the form of potassium iodide. Does this sound familiar? It should, because some people have touted this as being a necessary part of survival supplies in order to prevent the intake of radioactive iodine which might result in thyroid cancer. What the folk failed to mention, or quite possibly didn't know, was just how common this particular mineral is. Potassium iodide tablets are advertised for \$2 per bottle of 14—14 cents each. To pay that much for something that is present in table salt is ridiculous. People who do not use table salt, can get all of the needed K Iodide from the aforementioned multi-vitamin/mineral tablets. Iodine water purification tables would supply some, if not all, of the needed amount when such purified water is ingested. But be careful as iodine in any form is a dangerous poison! A small amount is needed in order to live, but too much can result in anything from diarrhea through to death. Toxic levels vary with the age, weight, sex, race, and physical condition of the individual, so it is impossible to provide an accurate idea of the overdose. However, the iodine content of the human body is about 0.00005 percent—that's five ten thousandths of one percent!

Because of the short life of radioactive iodines—there are three of them—iodine supplements will not be required for very long, if at all. Iodine 131 has a half-life of 8.04 days and is gone in 65 days. Iodine 125 has a half-life of 60 days and is gone in 460 days. Iodine 135 has a half-life of 2.3 hours and is gone in about 18 hours. The USRDA is 1.5 milligrams, with an optimum dose of only 360 micrograms! Find out now whether you are one of the people who cannot tolerate much more than the USRDA. Some U.S. troops in Vietnam found out the hard way, in the field. Diarrhea is unpleasant enough when flush toilets and soft toilet paper are available. Imagine how it would feel cooped up in a shelter or out in the field!

Iron is another very essential mineral, needed to prevent anemia, etc. But it has been shown that people deficient in iron have fewer problems with bacterial infections! This seems that Iron is a micro-bacterial nutrient in that many bacteria are iron dependent for their growth. Lowered iron levels may work to decrease the severity and duration of infections

Continued on page 75

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Full-Auto

I'd like to clear up some of the misunderstanding about automatic weapon ownership. Many people have no idea they can own an automatic weapon. Just to give an example, there are 39 states in the U.S. where ownership of automatic (or Class III) weapons is possible. There is a \$200, one time, tax stamp. I know this isn't chicken feed, but in 1981 I purchased a Mac 10 submachine gun new for \$225. I then sent in my paperwork and \$200 for the tax stamp. Four weeks later I got my paperwork back, and a few hours later I was in the woods shooting up targets. My total investment: \$425. I'd also like to see some articles on nutrition. I recently finished a course in nutrition. I was surprised by a study I did on kilocalorie needs. I found out I needed far more kilocalories than I had planned for. I worked out the kilocalorie needs for everyone in our survival group, and found we didn't have near the one-year supply I once thought. It would help to cover the major vitamins and minerals. I found out several things that I'm sure will improve my group's chances to survive.

Name and Address Withheld
Federal firearms laws aren't exactly easy on us civilians, but they're designed to keep weapons out of the hands of criminals. Of course, these laws have proven ineffective, but people like you who are upright citizens and desire full-auto weaponry are able to obtain them, no sweat. Thanks for the input. And we promise more nutrition and diet-related articles in the near future.

Stun Gun Twist

I would like to join the growing chorus of your readers pleased with the way you have moved away from becoming just another "gun" magazine. I also am canceling my subscription to the other "survival" magazine. On the article on the Nova 5000 Stun Gun in your May issue, a potentially useful modification would be to add an ear plug jack to the side of the unit. That way when using a cheap pair of headphones, it would look like you were just carrying a portable radio. "Give me that radio buddy." "Sure pal, here it is."

Ken Scharabok
Dayton, Ohio

How about putting a telephone pager deal on the zapper's case? The thug would think you're an on-call doctor, or some sort of high-stress middle-manager, and would be equally surprised when he went for your wallet.

Survival Groups

I am a 12-year-old survivalist. I went to a survival group in Chicago, Illinois. When I moved to Florida, I thought there would be a lot of survival groups here. I have looked, but cannot find another group. Would you please list some groups in one of your future issues?

Jeff Sarsoun
Deland, Florida

See our new directory, choose a group and write.

Dissatisfied

My wife purchased, for my birthday, on January 1, 1985, a Four Star Curtis E. LeMay Randall. Upon inspection and attempting to test fire this weapon, I became highly disappointed. This weapon would not even fire service hard ball ammunition. I shipped the pistol to the Randall Firearms Company on January 2, along with a letter explaining all the deficiencies I had found in this weapon. I followed up this letter with an average of two phone calls a week. In doing so, I became acquainted with Randall's customer service representative. On each and every occasion she assured me my pistol was being processed through with all due haste. After being assured, on four occasions, that the pistol would be shipped, I had yet to receive it as of March 8. Whereupon I called again and was informed by the representative that the weapon had not even been started on yet. I don't know how the major firearms publications can continue to write up the glowing reports of these weapons and the customer service of the company. Whether the gun buying public is being misled and misinformed or if I am the unlucky one, I have yet to determine.

Charles R. Thornton
Readyville, Tennessee

Unfortunately, sometimes firearms writers are sent finely tuned "ringers" that perform flawlessly—and the writers' reports so state. Then, on the advice of the magazine writers, individuals make purchases of the much touted weapon, and are sorely disappointed. Moreover, firearms writers may have the pistol or revolver for only a few days, and can't really evaluate its performance over the long term. The publishers of American Survival Guide will issue a new magazine in September that will do away with this nonsense: Handgun Illustrated. All firearms reports therein will be by reliable authorities who've really tested the firearms.

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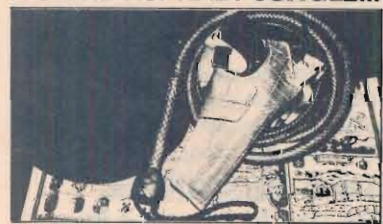


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MAIL CALL

Explosive Limits

I read your article "What If" in the November, 1984, issue of *American Survival Guide*. The content of the article was very informative and interesting. However, I wish to clarify a point that you possibly have misinterpreted. When referring to a gas/air mixture, the closer together the ratio becomes, the less likely is the chance of having an explosion. The flammable limits, the minimum and maximum gas/air ratios determines if ignition or combustion can occur. In the case of methane or natural gas the limits are 5 percent and 15 percent gas in air. What this is saying is that between 5 percent, or 1:20 ratio of gas to air, and 15 percent, or 1:6 ratio of gas to air, there exists an explosive range. If a spark or source of ignition was energized and the gas/air concentration is within the 5-15 percent range, an explosion would occur. If less than 5 percent gas is present, the mixture is too "lean" to burn. Conversely if it is above 15 percent gas/air, the mixture would be too "rich" to burn. Natural gas, methane, after it has been cleaned up, has no odor, so it is stench with a sulfur-bearing compound, usually ethyl mercaptan. This agent is noticeable at concentration of less than 0.01 percent, so you can smell "gas" long before it is in an explosive concentration. The most reliable method of gas detection is through the use of an explosimeter. This device can sense and detect any flammable gas and is very useful for natural gas. Also, I could not find the meaning of defugely.

Thomas F. Gibson
Safety Engineer

Prospect Park, Pennsylvania

Mr. Gibbons, we thank you for this information—and we hope none of our readers get a bang out of it. A defugely is something like a discombobulation. ●

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AVITAMINOSIS

Continued from page 71

caused by those bacteria. Too much iron may result in an obscure disease known as "iron overload anemia."

In general, the onset of any vitamin deficiency is slow and the victim does not realize that anything is going wrong. In the case of certain B-Complex deficiencies the victim will start to act irrationally early in the disease, and may even violently resist your attempts to help.

Vitamin deficiency in children, once established, is usually not as easy to treat as the example previously given. Such deficiency states may take months to appear, and by then have become serious. Some of the mental disorders will become apparent considerably earlier than that and, if you are aware of them and their causes, may give you the opportunity to arrest and then reverse the deficiency.

The water-soluble vitamins are much affected by the loss of intake or absorption, but, except for cases of major trauma, replacement or make-up can usually be delayed up to 72 hours. The best way to make up these vitamins is to give them by mouth rather than by injection. In the case of major trauma, the additional vitamins should be given as soon as the patient is able to take them by mouth or by intravenous injection, if available. If your group contains competent medical people the decision as to when to start treatment should be left up to them. In the event that they become patients, have them start training your group in how to make the decisions and administer the supplemental vitamins. Please note that certain vitamins can only be injected intramuscularly.

Stockpiling individual vitamins in low-dose-pill form may pose a problem, as many companies offer them only in doses considerably higher than the three times USRDA that this article recommends. And most companies do not offer Vitamin K, which should definitely be in your storage program. In the case of obtaining K, the only mail order firm known that sells it is Puritan's Pride, 105 Orville Drive, Dept. ASG, Bohemia, NY 11716-9986; Out of state phone (800) 645-1030 toll-free, in state call (800) 832-1111. Puritan's business hours are 9 a.m. to midnight, Monday through Saturday. If you cannot locate low-dose vitamins, buy the lowest that you can find, and use them accordingly. If possible, buy tablets or pills that can be easily broken into equal parts so that doses can be halved or quartered.

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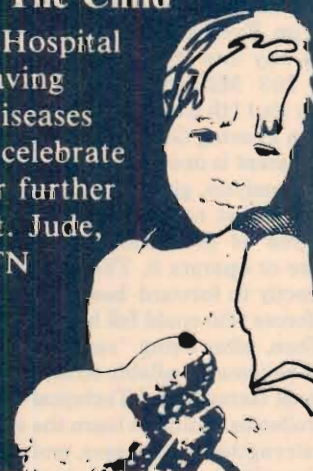
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Knowledge of the enemy's tools of war could mean the difference...

By Richard Bocklet

AMIDDLE EAST conflict terminates. The Arabs drag themselves home; Israel surveys its new boundaries and the spoils of war. Thousands of tons of Soviet-supplied war materials from T-62 tanks and AK-47 assault rifles to armored vehicle helmets and field transmitters, are scooped up. Eventually, some of the cache finds its way into the hands of the U.S. Army's 203 Military Intelligence Battalion for its 11th Company evaluators at Aberdeen Proving Grounds, Maryland.

If equipment is new or rare, it's stripped down for analysis, given the "quick-and-dirty," to elicit range, accuracy, speed and degree of protection plus how to drive, fire or operate it. The findings are sent directly to forward-based units and special forces who could fall behind enemy lines. Then, after being "sanitized," the material becomes available Army-wide in operational manuals and Technical Intelligence Bulletins. Soldiers learn the equipment's strengths, weaknesses, and what it can and can't do, so they're better prepared on a future battlefield.

Farmed Out—Standard equipment is cleaned up or reconditioned, then farmed out to units around the country to familiarize personnel with weapons systems, and ammunition manufactured or used by a potential adversary. Such material adds to realism during tactical exercises employing OPFORs — Opposing Aggressor Forces — created from army units equipped to portray the doctrine and tactics of Warsaw Pact soldiers. The program offers highly practical field training experience, while developing an appreciation for enemy combat capabilities. Trainers and OPFOR members from Ft. Campbell in Kentucky, Ft. Knox, in Tennessee, Ft. Hood, in Texas, and Ft. Riley, in Kansas come to the 11th for initial instruction.

The Tour—As guest of the 11th Military Intelligence Company, I spent a day touring its headquarters, instructional, supply area and firing range at Aberdeen headquarters, instructional, supply area and firing range at Aberdeen Proving Grounds for a first-hand impression of how the Army's link to foreign weaponry functions. The 40 or so personnel here are a special breed — widely traveled, with years of experience, and possessing a good knowledge of U.S. equipment. These soliders are qualified to make

rational deductions about foreign manufactured products, then to impart that knowledge to fellow soliders.

Weapons instructor, Sgt. James Missey stood among rows upon rows of firearms — some looking spit-polish new, others bearing the appearance of years of use. In all, though, this was a veritable international rifleman's delight. Smiling broadly, Sgt. Missey held one piece after another, commenting on its particular characteristics. "This is the 63.5mm, RPG-18 smooth-bore disposable launching tube," he explained, "the Soviets, answer to our anti-armour round. It's similar to the U.S. LAW disposable anti-armour rocket, but heavier and longer, and the rocket charge can penetrate 12 inches of homogeneous steel, compared with 8 inches for ours. But, while effective, the RPG-18 is risky to use. It contains no safety device. Once the launcher is extended, the rocket must be fired. Drop it and it might go off — and take your foot along in the process.

"If it's a Russian, Warsaw Pact, NATO, or major Third World country small arm," Missey continued, "probably at one time or another it passed through our hands as the U.S. Army's only technical intelligence unit. Military units from throughout the country come here for one-week weapons familiarization courses — assembly, disassembly, and range firing at the programs' end. Those with the greatest need to know get priority units such as Special Forces, Rangers, the 82nd Airborne Division and the 101st Air Assault Division. Annually, we host about 2,000 personnel and, as the only proponent of foreign arms instructor courses, all OPFOR's trainers around the country come here."

SKS Carbine—Touching a rifle that had obviously seen better times, the Sgt. explained, "This is the Soviet SKS carbine. Unlike most other weapons here, still used on battlefields around the world, the SKS is mainly ceremonial. If you catch the parades in Red Square on TV, this is the rifle the Russian infantrymen are carrying."

Before this presentation was over, the weapons I was shown included the FPK Roumanian sniper rifle, AKM assault rifle, RPK squad-level machine gun, RPG-7 grenade launcher, AK-74s assault rifle, the RPK-74 and PKM general purpose machine gun, and the Red Chinese Type-

68 assault rifle and RPG-21 grenade launcher.

Then I was guided to the Communications and Electronics Section for a talk with Specialist Jerome Wallace about Warsaw pact field equipment. "This is the R113 Soviet model and A2200 Chinese Communist squad radio," he explained, "containing transmitter-receiver, power supply, and internal-external matching units. This set is frequently used in the older Soviet T-54 and T-55 tanks.

"Here's the tankers's helmet," he continued, "appearing in two versions: one with canvas and foam pads, the other with fleece lining. As you can see, neither offers much protection against shell fragment. Another limitation is that the microphone must be held to the throat or transmission would be garbled and easily misunderstood.

"Now, here's the R123 field radio most widely used in Soviet vehicles," the Sergeant explained. "It has a capability of four pre-set frequencies because the figures on the glass are unreadable without magnification. And if the glass is cracked or broken, there's no way the operator can see his frequencies.

"The Soviets hold the theory that a nuclear blast would render solid state circuitry useless. Accordingly, their radio equipment is powered by miniature and several larger vacuum tubes. Meanwhile, United States planners devised an element to protect solid state circuitry against electromagnetic pulse — EMP. I guess ultimately, unless there's a nuclear conflagration, we won't know which theory is correct."

The USSR's—Models 311 through 313 receivers lack internal speakers and they require an external hand or head set to receive communications. American commandos are taught to sabotage them simply by confiscating the receiving sets. Used by the Soviets since the Vietnam War era, the IMP metallic mine detector remains in wide use. However, Soviet authorities seem mindless to the fact that current mines are of non-metallic materials which don't register on the detector.

The Heat—Staff Sgt. Prince Simmons works with NBC Equipment and Medical Platoon analyzing chemical and biological warfare implements. He explained, "Made of heavy rubber, including a hood, the OPI



Clockwise from above are a Soviet trenching vehicle, a T-55 tank, a PT-76 recon vehicle, a West German communications van, and a Soviet automatic chemical/radiation detector/alarm-system. All are used to train U.S. troops.



standard Soviet protective suit snaps in the front and is worn as a cape or tucked between the legs as overalls. But, because of gaps between the snaps, special undergarments are required from ankles, to neck to wrists. Over that, the soldier wears woolen field uniform and gear, then the rubber outer suit. Understandably, heat injuries are common in the Russian Army."

"The mannequin is wearing the standard Soviet SHM protective mask," Sgt. Simmons continued. "It has no voice meter, no water-drinking capability, but has a single lens which, if cracked, compromises the entire mask. It can't be fitted with corrective lenses, so if the Russian soldier wears glasses, he is as blind as a bat using this mask. The SHMS special-issue mask accommodates communication personnel. The problem is, at 300 meters it's distinguishable from the other masks sending the quick message, shoot me first, to eliminate unit transmission."

The Soviet protective masks use the 2-

pound MO4U cannister with filter, and when the soldier is running the cannister tugs the mask. In another configuration, it hangs down before the man via a connective hose. During movement, this swings all around end angering the man on either side, and, in hand-to-hand combat, the enemy could even beat the wearer to death with it.

"Russian NBC equipment is simple, easy to move to the field, and generally effective," Sgt. Simmons summarized. "It lacks comfort, but that's little concern to the military authorities. The point is, they're prepared for a chemical war right now, and have used guinea pigs in Southeast Asia and Afghanistan to perfect their weapons stocks. It could take years for NATO forces to be properly fitted for an NBC battlefield."

Vehicles—Next, was the vehicle field area, the 11th Military Intelligence Company's version of a used car lot. Here

instructors teach specifications, operation and maintenance of scores of foreign military vehicles from around the world. Staff Sgt. Tracy Woodson showed me around.

"In the Vehicle Operator Course they drive this vehicle, then in the Maintenance Course, with the turret removed, students learn to fix what they broke," the Sgt. said, standing before a T-54 Soviet tank. The T-54 and T-55 tanks have the same track systems as their successors — T-64, T-72, and T-80 models. Although used by Soviet forces until the late, 50s, these T-54 and T-55s are now seen mainly in Third World armies. "Double-clutching is important or you'll burn the system out. Switching gears isn't a problem with American automatic transmission. Neither is using steering laterals which we don't have, but if you have to drive Russian vehicles, you better master this."

Offering the 255 B Bridge truck as an example of a Soviet wheeled vehicle, the Sgt. explained, "The Russians have an ►

SOVIET WEAPONS



Clockwise from left are a West German armored vehicle, a People's Republic of China Type 581 armored personnel carrier, a Soviet GAZ 69 scout vehicle, a Russian SHM protective mask, and a Soviet tanker helmet.



air-centralized tire inflation system that permits pressure changes by switching valves. In swampy areas where more traction, is needed the driver lets out air. If he takes small arms fire in one wheel, he cuts off air to the other tires, feeding it all into that one. The Soviets employed this system for years, but the West is only now starting to equip some of its vehicles with it."

The Shop—The Maintenance Shop has bays for welding, machine and engine repair, fuel and electronic specialties. Mechanics fix or recondition acquired threat equipment then ship it to OPFOR programs for that extra touch of training realism. Others remain at Aberdeen for demonstration use in the courses.

"Sometimes the equipment arrives in a group. Other times it just trickles in," the Sgt. added, "but it's somebody else's job to acquire it."

Firing Range—A 10 minute jeep ride brought me to one of the firing ranges used by the 11th Military Intelligence Company. A 90-man group of Army reservists from Washington, D.C., was doing orientation shooting with Russian AKMS 7.62mm and AK-74 assault rifles and the PK squad machine gun. Company instructors carefully supervised the reservists as they pumped round after round into fixed silhouette targets.

Company commander Capt. William R. Brown supplied commentary: "Note the correct firing position — legs spread apart 45-degrees, leaning into the weapon to compensate for the rifle's kick. First they fire in semi-automatic, then in automatic mode. These weapons aren't really that difficult to fire, but it takes three to four months to gain a proficiency.

"On a typical day, we fire between 30 to 40 different weapons for the visiting Special Forces and Military Intelligence guys,

Brown said. "After all, if these men get caught behind enemy lines, the ability to fire foreign guns correctly could save their lives. They're among our keenest students."

As many rounds were expended, the soldiers pulled out crates of replenishment ammo. On the wooden side were Cyrillic characters of the Russian alphabet. Were these painted on to add realism or actual crates shipped from a foreign battlefield? No one would answer that.

During wartime, military intelligence men would survey captured or disabled equipment right on the battlefield, looking for glaring deviations in design or function. They would provide on-the-spot intelligence to unit commanders and more detailed reports to higher-level commands later. By helping fellow soldiers know the enemy better, military intelligence could help to spell the difference between victory and defeat. ●

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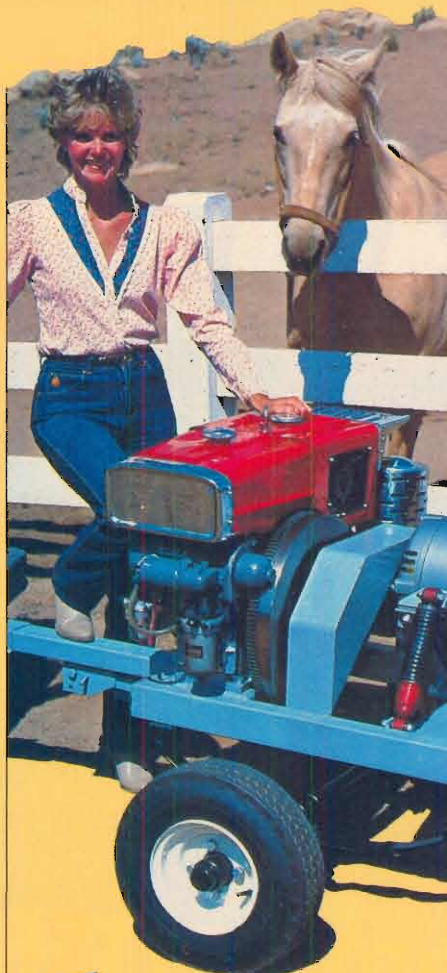
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